

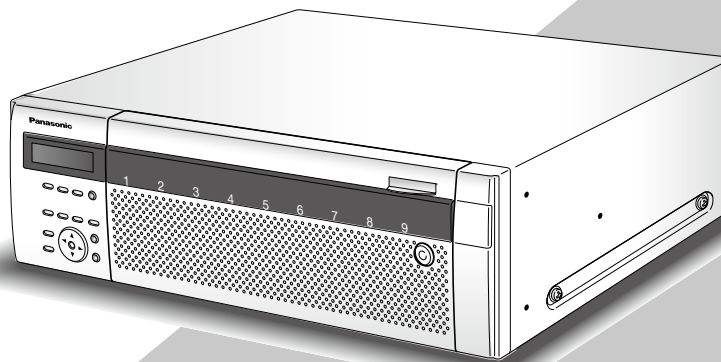
Panasonic

Setup Instructions

Network Disk Recorder

Model No. **WJ-ND400K**

WJ-ND400K/G



Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.
The model number is abbreviated in some descriptions in this manual.

Contents

Preface	3	Network	63
About the user manuals	3	Basic.....	63
System requirements for a PC	3	DDNS	67
Trademarks and registered trademarks	4	SNMP	68
Abbreviations	4	Panasonic alarm protocol	69
Restrictions when operating MPEG-4 images	5	User management.....	70
Operation flow	7	Basic.....	70
Setup menu and its items	8	Administrator.....	71
Network settings	11	User.....	72
Network settings of the recorder.....	11	Edit the user settings.....	73
Network settings of a PC	13	Delete the user settings.....	73
About the operation window	15	Host.....	74
Display/Close the operation window.....	15	Edit the host settings	75
Major operating controls and their functions	17	Delete the host settings	75
Top page.....	17	User level.....	76
[Control] button	18	Maintenance.....	78
[Cam. select] button.....	19	Product information.....	78
[Setup] button.....	20	Disk information	79
Status display area.....	21	Network information	82
Playback point operation area	22	Disk	83
[HDD] tab.....	22	Settings management	85
[CAM] tab	24	Disk config.....	86
Basic operation	25	HDD management.....	86
Quick settings.....	26	Disk partition information	87
Setup	26	Disk format	89
Language/Time & date	26	Format	89
Network settings	27	Format the pre-event recording area	91
Camera registration.....	28	Notification by e-mail	93
Program setup.....	30	Alarm mail.....	93
Basic settings.....	31	Warning mail.....	93
Basic.....	31	Troubleshooting.....	96
Time & date	32	Message displayed on the information bar	101
Emergency recording	34	Glossary	103
Event	38	Index.....	107
Basic.....	39		
Terminal alarm	40		
Site alarm	41		
Command alarm.....	42		
Schedule recording	43		
Program.....	43		
Time table.....	47		
Special days	48		
Camera.....	49		
NW camera.....	49		
Group	54		
Sequence	55		
Server	57		
NTP	57		
FTP	58		
Mail.....	60		
Proxy	62		

Preface

The network disk recorder (WJ-ND400K, WJ-ND400K/G) is designed for use within a surveillance system, and record images/audio from the connected network cameras on the hard disk drives. Up to 64 cameras can be connected via a network.

It is possible to perform the settings or operate the recorder using a web browser installed on a PC connected to a network. (It is necessary to configure the network settings of a PC to operate this product using a PC.)

Up to 16 PCs (web browsers) can access the recorder concurrently and it is possible to perform the settings and operate the recorder. (The maximum number of PCs that can access the recorder varies depending on the network.)

About the user manuals

There are 4 manuals provided for the WJ-ND400K, WJ-ND400K/G as follows.

Installation Guide:	Contains descriptions of how to install/connect this product, and descriptions of how to operate this product with the buttons on the front panel.
Setup Instructions (PDF) (this book):	Contains descriptions of how to configure the required settings and how to connect to other devices.
Operating Instructions (PDF):	Contains descriptions of how to operate this product with a PC.
Quick Reference Guide:	Contains descriptions of how to configure the basic settings and how to use the major functions.

Adobe® Reader® is required to read these operating instructions (PDF) on the provided CD-ROM.

When the Adobe® Reader® is not installed on the PC, download the latest Adobe® Reader® from the Adobe web site and install it.

"WJ-ND400" or "ND400" shown in the instructions and illustrations used in these operating instructions indicate the WJ-ND400K, WJ-ND400K/G.

Refer to "readme.txt" on the provided CD-ROM for further information about the optional dedicated software, compatible cameras and their versions.

The screens used in these operating instructions show the case of NTSC model.

System requirements for a PC

It is recommended to operate this unit using a PC that meets the following system requirements.

OS:	Microsoft® Windows Vista® Business SP1 (32-bit) Microsoft® Windows® XP Professional SP2, SP3* Microsoft® Windows® XP Home Edition SP2, SP3*
OS Language:	English, French, Spanish, German, Italian, Russian, Chinese
CPU:	Pentium® 4 3.0 GHz or faster
Memory:	1 GB or more (512 MB or more is required when using Microsoft® Windows® XP.)
Monitor:	Resolution: 1 024 x 768 pixels or more Color: 24-bit True color or better
Network interface:	10/100/1 000 Mbps Ethernet port x1
Web Browser:	Windows® Internet Explorer® 7.0 Microsoft® Internet Explorer® 6.0 SP2, SP3*
Audio interface:	Sound card (when using the audio function)

Other: CD-ROM drive: It is necessary to refer to the operating instructions and use the software on the provided CD-ROM.
DirectX® 9.0c or later
Adobe® Reader® : It is necessary to refer to the operating instructions on the provided CD-ROM.

* Microsoft® Internet Explorer® 6.0 SP2/SP3 is required when using Microsoft® Windows® XP Professional SP2/SP3 or Microsoft® Windows® XP Home Edition SP2/SP3, respectively.

Important:

- When using a PC that does not meet the above requirements, displaying of images may become slow or the web browser may become inoperable.
 - Audio may not be heard if a sound card is not installed on a PC. Audio may be interrupted depending on the network environment.
 - Microsoft® Windows® XP Professional x64 Edition is not supported.
-

Note:

- Refer to "Notes on Windows Vista®" (PDF) for further information about system requirements for a PC and precautions when using Microsoft® Windows Vista®.
-

Trademarks and registered trademarks

- Adobe, Adobe logos, and Acrobat are registered trademarks of Adobe Systems Incorporated in the U.S. and/or other countries.
- Microsoft, Windows, Windows Vista, Internet Explorer, ActiveX and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

Abbreviations

The following abbreviations are used in these operating instructions.

Microsoft® Windows Vista® Business SP1 (32-bit) is described as Windows Vista.

Microsoft® Windows® XP Professional SP2, SP3 and Microsoft® Windows® XP Home Edition SP2, SP3 are described as Windows XP.

Restrictions when operating MPEG-4 images

There are following restrictions when "MPEG-4" is selected for the image compression method of "NW camera" under "Camera" on the setup menu.

1. When displaying live images

- (1) Black screen may be displayed for the first few seconds (*) when the following operations are performed while displaying live images.
 - When MPEG-4 live images are displayed (by switching camera channel, etc.)
 - When MPEG-4 image is enlarged (or when enlarged MPEG-4 image is resized to the original size)
- (2) It may take several seconds (*) for refresh interval of MPEG-4 image when displaying images on a 4-screen.
Example: When "3 seconds" is selected for the refresh interval on the camera, MPEG-4 image will be refreshed in 3 seconds intervals.

2. When displaying images sequentially

When the image compression method of the camera selected for a camera channel is "MPEG-4", the respective sequence step will be skipped.

3. When playing recorded images

- (1) Displayed playback time may be fast for several seconds (*) when the following operations are performed while playing recorded images.
 - When MPEG-4 recorded images are played (by changing camera channel, etc.)
 - When MPEG-4 image is enlarged (or when enlarged MPEG-4 image is resized to the original size)
(When operating to zoom in/out a paused MPEG-4 recorded image, image of several seconds later than the displayed image may be enlarged.)
 - When the [PLAY] button is clicked again while playing MPEG-4 image
 - When the first frame is displayed by clicking the [NEXT IMAGE] button during pausing
- (2) Playback may be performed in several seconds intervals (*) when the following operations are performed while playing MPEG-4 image. Refer to the operating instructions (PDF) for how to control playback.
 - Reverse playback
 - Fast playback/fast reverse playback
 - Reverse frame playback

Example: When "3 seconds" is selected for the refresh interval on the camera, MPEG-4 image will be refreshed in 3 seconds intervals.
- (3) When two records are played sequentially, the last few frames of the former record and the first few frames of the next record may be displayed overlapped.
- (4) When playing MPEG-4 image by designating time and date, playback may start from a point several seconds before or after the designated time and date or from the first frame of the next record.

4. When recording images

- (1) Time and date displayed on the recording event list (actual start time of recordings) may not exactly indicate the actual time of recording trigger (event occurrence time, start time of the schedule recording, etc.), and also the recording duration may be shortened for seconds worth two times of the refresh interval set on the camera.

Example: When the set recording duration and the set refresh interval of the camera are 10 seconds and 1 second respectively

$$10 - (1 \times 2) = 8 \text{ (sec)}$$

The minimum actual recording duration is 8 seconds.
- (2) When pre-event recording is set to be performed, pre-event recording duration may be longer than the set duration.

Example: Depending on the size of the image data, pre-recording duration may be around 10 seconds even when setting 5 seconds for the pre-event recording duration.

5. When copying images

Copying may start from a point several seconds (*) later than the designated start time when copying MPEG-4 images. To copy the desired images for sure, designate start time several seconds earlier than the time when the desired images are recorded, and set time range for copying longer than the refresh interval set on the camera.

6. When downloading recorded images

Downloading of recorded images may start from a point several seconds (*) earlier than the designated start time. Set time range for download longer than the refresh interval set on the camera.

7. When transmitting images recorded at an event occurrence to the FTP server

When transmitting images recorded at an event occurrence to the FTP server, image transmission duration may not be exactly the same as the duration set for "Duration-Pre" and "Duration-Post". Set "Duration-Pre" and "Duration-Post" longer than the refresh interval set on the camera.

8. Other

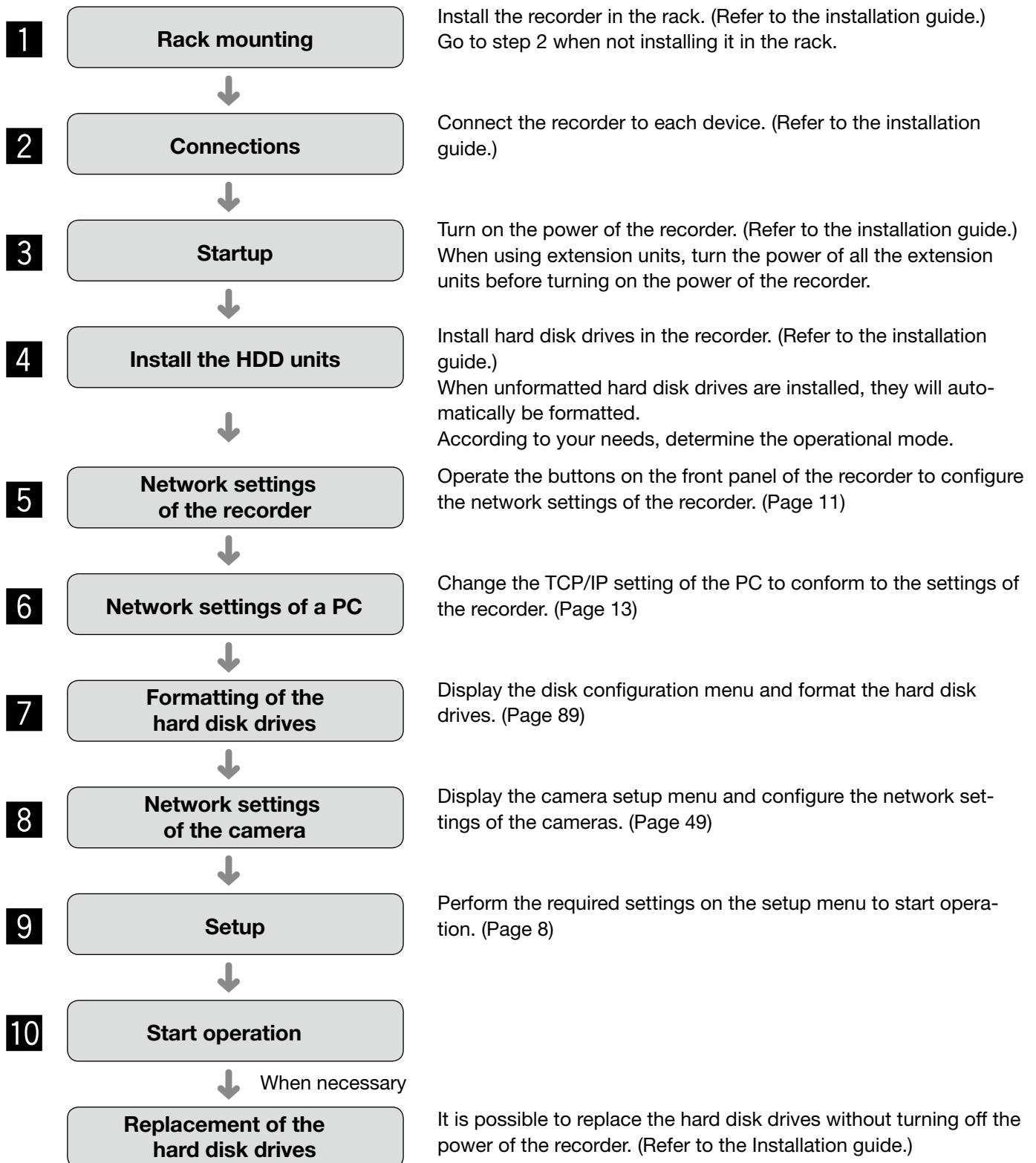
MPEG-4 images will not be attached to alarm mails.

Even when images are to be transmitted to the FTP server periodically, MPEG-4 images will not be transmitted.

* Time (seconds) differs depending on the refresh interval set on the camera (0.2 - 5 seconds). To shorten time lag, set the refresh interval on the camera shorter. Refer to the setup instructions of the camera for information on how to configure the refresh interval.

Operation flow

The operation flow of the recorder is as follows.



Setup menu and its items

It is necessary to configure the settings on the setup menu in advance to use the recorder. The setup menu will be displayed by clicking the [Setup] button.

Setup items	Description	Reference page
Quick		
Setup	Displays the "Quick" page that contains the minimum required settings to be configured to operate the recorder.	26
Basic		
Basic	Settings for the basic operations of the recorder can be configured.	31
Time & date	Current time and date can be set.	32
Emergency rec.		
Emergency rec.	Settings relating to emergency recording such as the recording time and recording rate can be configured.	34
Event		
Basic	Basic settings relating to the event actions can be configured.	39
Terminal alarm	Event actions to be taken at a terminal alarm occurrence can be set.	40
Site alarm	Event actions to be taken at a site alarm occurrence can be set.	41
Command alarm	Event actions to be taken at a command alarm occurrence can be set.	42
Schedule		
Time table	Create timetables for each day of the week, and assign a program to each timetable.	47
Program	Up to 8 recording programs can be created. Settings relating to recordings such as the recording rate for each camera channel can be configured.	43
Special days	Timetables to special days aside from other days of the week can be assigned.	48
Camera		
NW camera	Network settings of cameras such as the IP address and the port number of the cameras, etc. can be configured.	49
Group	The title of the camera group can be set.	54
Sequence	Settings that required to perform the sequence display of live images from cameras can be configured.	55

Setup items	Description	Reference page
Server		
NTP	Settings that are required to correct time based on the NTP server, such as the NTP server address, can be configured.	57
FTP	Settings that are required to transmit images from cameras connected to the recorder to a designated FTP server periodically can be configured.	58
Mail	Settings relating to the mail notification function, that sends e-mails to addresses registered in advance at an event or error occurrence, can be configured.	60
Proxy	Basic network proxy settings can be configured. Determine whether or not to use the proxy server, and configure the settings such as the server address settings, etc.	62
Network		
Basic	Network settings can be configured. Settings that are required to connect to a network such as the IP address and gateway address can be configured.	63
DDNS	Setting relating to DDNS can be configured. Determine whether to enable or disable DDNS, and configure the settings of the registered user names, etc.	67
SNMP	Settings relating to SNMP can be configured. Configure the settings to check the status of the recorder, etc. by connecting the SNMP manager.	68
Panasonic alarm protocol	Settings that are required to send a message to addresses registered in advance using "Panasonic alarm protocol" when an event or a problem occurs can be configured.	69
User mng.		
Basic	Determine whether to enable or disable the user authentication and the host authentication.	70
Administrator	Information of the registered administrators such as the administrator name, password, the default screen, etc can be edited.	71
User	Settings relating to the user authentication such as user registration can be configured. User information can be edited or deleted. User name, password and operational level can be set.	72
Host	Settings relating to the host authentication such as registration of PCs (hosts) to allow to access the recorder via a network can be configured. Host information can be edited or deleted. Operational levels and IP addresses of PCs can be set.	74
User level	Functions operable in each user level can be set.	76

Setup items	Description	Reference page
Maintenance		
Product information	Versions of the software, the hardware (this recorder), MAC address, serial number, temperature inside the recorder and software version of the connected extension unit will be displayed.	78
Disk information	Disk partition information of the recorder will be displayed. Information such as the recording information, operational mode of the hard disk drives, disk capacities, available capacity of each recording area, etc. will be displayed.	79
Network information	Network information such as IP addresses of NW camera connected to the recorder, communication rate to network, etc. will be displayed.	82
Disk	Settings relating to an action to be taken when available capacity of the hard disk drives run out can be configured, and data recorded on the hard disk drives can be deleted.	83
Settings management	The settings of the recorder can be saved and the saved settings can be loaded to the recorder.	85
Config.		
Disk information	Information such as the recording information, operational mode of the hard disk drives, disk capacities, available capacity of each recording area, etc. will be displayed.	87
Format	Assignment of event recording area and copy area, and formatting of the hard disk drives can be performed.	89

Network settings

Network settings of the recorder

Configure the following settings for the ports to be used.

The following settings can be configured using the buttons on the front panel. Parameters will be displayed on the LCD.

Setup items	Description
DHCP	Determine whether or not use a DHCP server. Select "ON" to obtain an IP address, subnet mask and default gateway from a DHCP server.
IP address	When selecting "OFF" for "DHCP", enter an IP address.
Subnet mask	When selecting "OFF" for "DHCP", enter a subnet mask.
Default gateway	When selecting "OFF" for "DHCP", enter a default gateway.
HTTP port	Designate the HTTP port number to be used. Normally "80" is to be designated.

The default network settings of the recorder are as follows.

Setup items	Camera port	Client PC port	Maintenance port
DHCP	–	OFF	–
IP address	192.168.0.250	192.168.1.250	192.168.2.250
Subnet mask	255.255.255.0	255.255.255.0	255.255.255.0
Default gateway	–	192.168.1.1	–
HTTP port	–	80	–

Important:

- The network settings for each port (IP address, etc.) should be configured with a different subnet. Otherwise, network communication may be failed.

Note:

- When the network settings of the PC are as follows, it is unnecessary to configure the above settings. It is possible to configure the settings and operate the recorder using a web browser after completing the connection.
IP address: 192.168.1.2 to 249, 192.168.1.251 to 254
Subnet mask: 255.255.255.0
Default gateway: 192.168.1.1
When the settings values other than above are set, it is necessary to configure the network settings of the recorder and the PC.
- The network settings of a camera can be configured on the setup menu of the camera. Refer to the "NW camera" section on page 49 for further information.

- 1 Confirm that the standby display is on the LCD.**
When a display other than the standby display is on the LCD, continue pressing the [ESC] button until the standby display is displayed on the LCD.

01/JAN/2009
1:00 32° C

- 2 Display the IP address setup display by press the arrows button (up or down).**

IP Address Setup
[SET]

- 3 Press the [SET] button.**
The "PT#1 IP ADDR" indication will be displayed.

PT#1 IP ADDR
≥192.168.000.250

- 4 Select the desired network port by pressing the arrows button (left or right).**

PT#1: Camera port
PT#2: Client PC port
PT#3: Maintenance port

- 5 Display the settings item by pressing the arrows button (up or down).**

DHCP
IP address
Subnet mask
Default gateway
HTTP port

Note:

- The settings of DHCP, default gateway and HTTP port can be configured only for "PT#2".
-

- 6 Press the [SET] button while the underscore mark () is displayed below the ">" indication.**
Move the underscore mark below the number to be edited.
The current selected settings item or a value will be indicated by the underscore mark "_".

PT#1 IP ADDR
≥192.168.000.250

- 7 Enter values using the arrows button.**
Move the underscore mark "_": Arrows button (left or right)
Enter a value: Arrows button (up or down)

- 8 To determine the edited setting, move the underscore mark below the ">" indication by pressing the [ESC] button.**

- 9 To configure other setting items, shift the display by pressing the arrows button (up or down).**

- 10 Repeat steps 5 - 8 to configure each setting item.**

Network settings of a PC

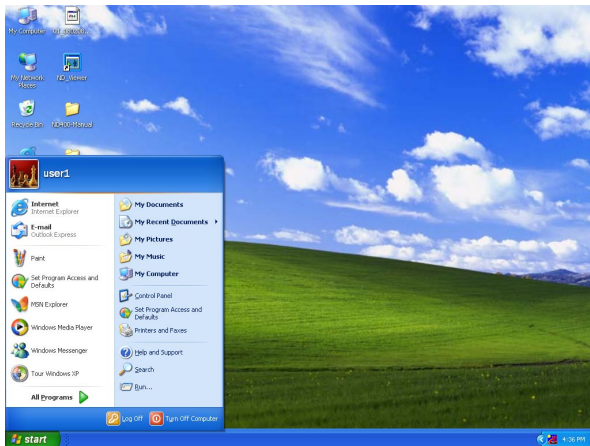
Change the TCP/IP setting of the PC to conform to the settings of the recorder. It is necessary to set the IP address of the PC and the client PC port of the recorder in the same subnet to access the recorder.

In these operating instructions, the settings are performed on Windows XP as examples. When using an operating system other than Windows XP, refer to the operating instructions of the OS in use.

Example: When using the recorder with the default (IP address: 192.168.1.250), set the IP address of the PC to "192.168.1.xxx (a number from 2 to 254 except 250)".

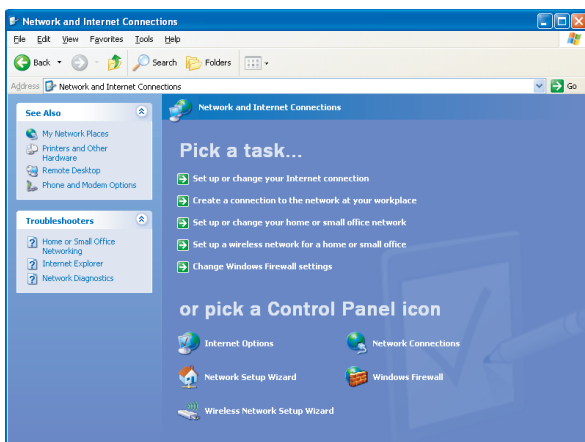
1 Log in to the PC as an administrator.

2 Click "Start" on the taskbar, and then click the "Control Panel".



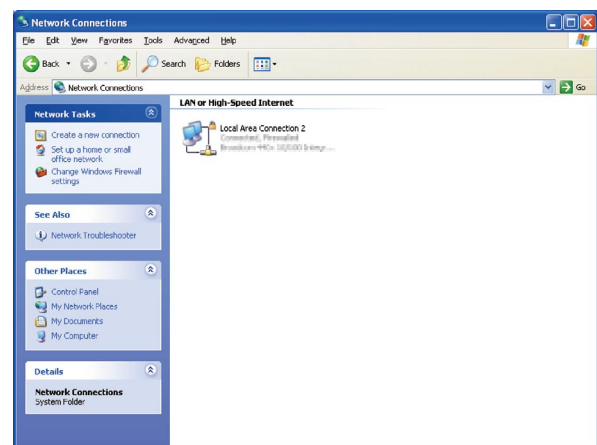
3 Click the "Network and Internet Connections" icon.

The "Network and Internet Connections" window will be displayed.



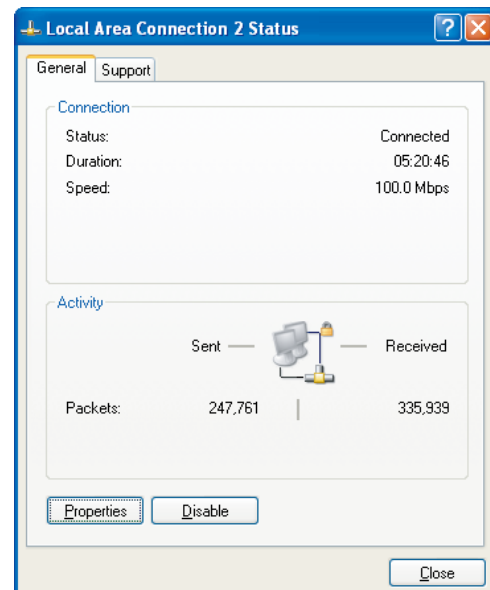
4 Click "Network Connections".

The "Network Connections" window will be displayed.



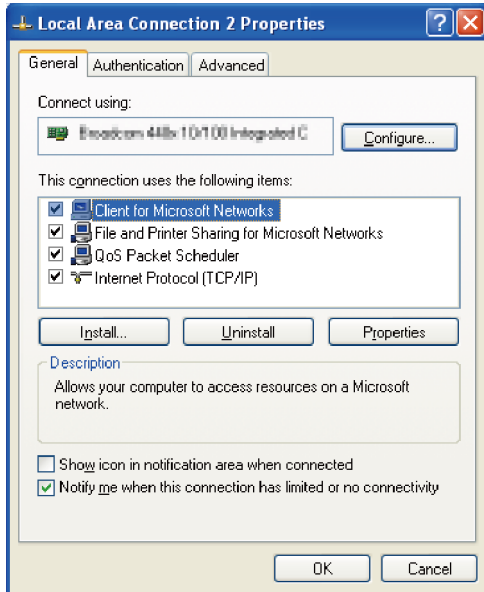
5 Double click "Local Area Connection 2".

The "Local Area Connection 2 Status" window will be displayed.



6 Click "Properties".

The "Local Area Connection 2 Properties" window will be displayed.



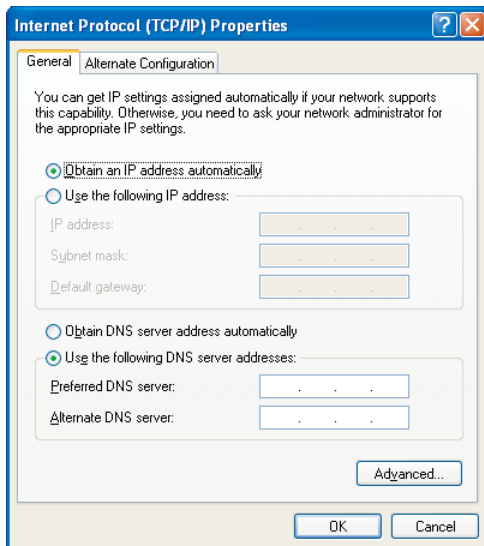
8 Click "Use the following IP address" and enter the IP address and the subnet mask as follows; IP address: Set in the same subnet as the recorder's.

Depending on the network configuration, it is necessary to configure the default gateway. Refer to a system administrator for information on how to configure the setting.

9 Click the [OK] button and close the window.

7 Click "Internet Protocol (TCP/IP)", and then click "Properties".

The "Internet Protocol (TCP/IP) Properties" window will be displayed.



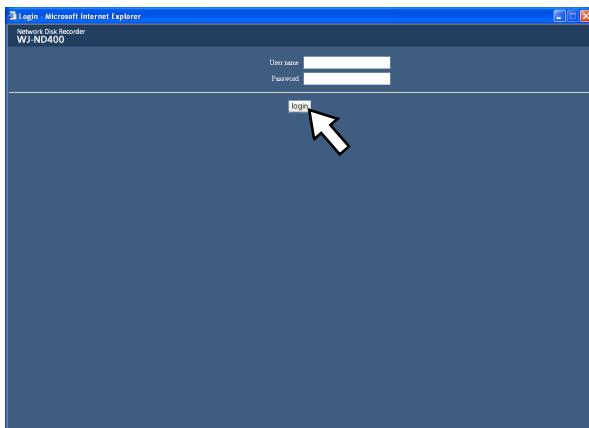
About the operation window

Display/Close the operation window

Display the operation window using a web browser installed on a PC.

- 1 Boot the PC.
- 2 Launch a web browser.
- 3 After the browser starts, enter the IP address set to the recorder in the address box, and press the enter key.

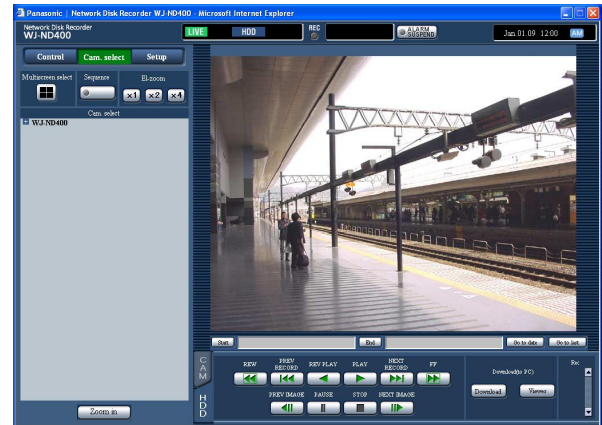
The authentication window will be displayed. This window will not be displayed when "Off" is selected for "User authentication" on the "Basic" tab page of "User management". (Page 70)



Important:

- Refer to a system administrator for the set IP address of the recorder.
- It is impossible to access the recorder from a PC which IP address is not registered to the recorder when "On" is selected for "Host authentication" on the "Basic" tab page of "User management". (Page 70)
Refer to a system administrator for further information.
- Do not attach "0" before the numbers when entering IP address.
Example:
OK: 192.168.0.50
NG: 192.168.0.050
- If a message is displayed on the information bar, see page 102.

- 4 Enter the user name and password registered on the recorder and then click the [login] button. The top page will be displayed.



Important:

- Refer to a system administrator for the set user name and password.
Refer to the "User" section on page 72 for information on how to register users.
- The default administrator name and password are as follows
User name: ADMIN
Password: 12345
- To enhance the security, change the password for an administrator before running the recorder.
Change the password periodically. Refer to page 72 for information on how to change the password.
- When the recorder is being operated without changing the user name and password, the pop-up window saying that it is recommended to change the password will be displayed.



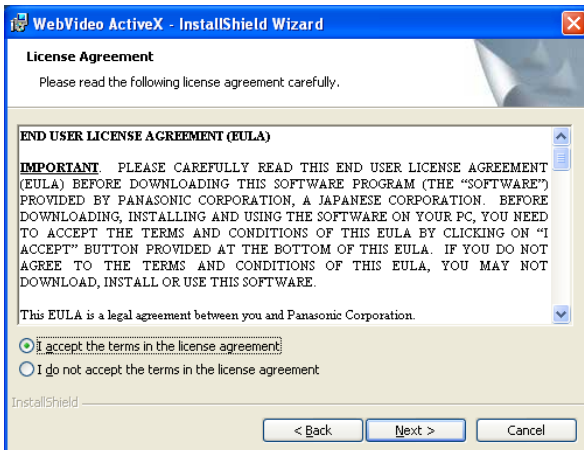
5 Configure the settings and perform operations by clicking the buttons and the tabs on the operation window.

Important:

- If a message is displayed on the information bar, see page 102.
-

Note:

- When the top page is displayed for the first time, the install wizard of the ActiveX control required to display images from the camera will be displayed. Follow the instructions of the wizard.



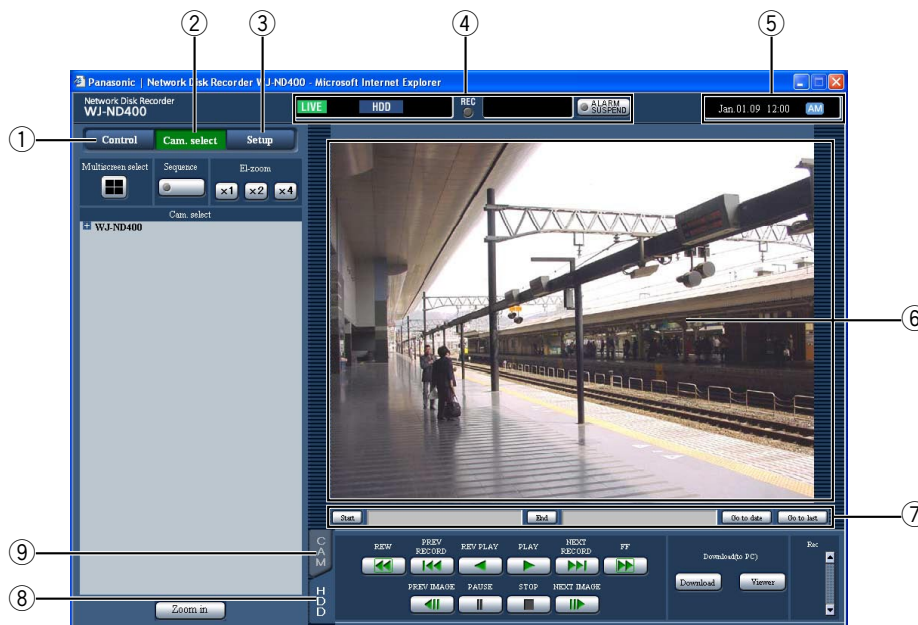
- When ActiveX for WJ-ND200/WJ-ND300 is installed, remove "WebVideo ActiveX" using the "Add or Remove Programs" control panel. After confirming that "WebVideo ActiveX" is deleted, install ActiveX of WJ-ND400.
 - When the install wizard is displayed again even after completing the installation of the ActiveX, reboot the PC.
-

6 Close the web browser when there is no more operation/settings configuration to be performed.

Click the [X] button at the top right of the window or shut down the browser.

Major operating controls and their functions

Top page



① [Control] button (page 18)

The operation panel will be displayed by clicking this button, and operations such as searching for recorded pictures on the hard disk drives and copying recorded images onto the copy area of the hard disk drives can be performed from the displayed operation panel. From the displayed operation panel, it is also possible to display images by switching the camera channels such as changing the screen of live image display from 1-screen to 4-screen, and the sequence display. Search results or log information will also be displayed on this panel.

② [Cam. Select] button (page 19)

The switcher functions such as switching camera channels are operable on this page.

③ [Setup] button (page 20)

The settings of the recorder can be configured on the setup menu pages displayed by clicking this button.

④ Status display area (page 21)

The status of the recorder such as the recording status, playback status, etc. will be displayed.

⑤ Current time display area

The current time will be displayed.

⑥ Image display area

Recorded images and live images will be displayed. The camera title is displayed at the upper left and the time and date (the current time and date of the camera's clock when displaying live images and the time and date when images were recorded when playing recorded images) at the upper right. Clicking the camera title during displaying images on a 4-screen will display images from the respective camera channel on a 1-screen.

At the default, the aspect ratio of each screen segment is 4:3. Refer to the aspect ratio setting (page 32) for changing the aspect ratio to 16:9.

⑦ Playback point operation area (page 22)

It is possible to designate a playback point or to skip to the latest recorded image.

⑧ [HDD] tab (page 22)

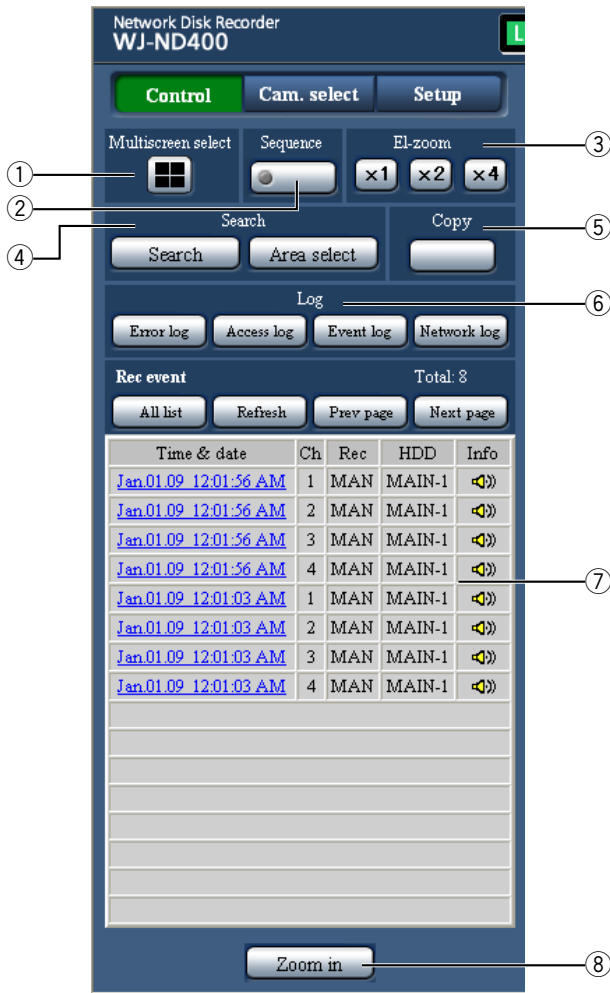
Playback operation and downloading a recorded image onto a PC can be performed on this tab.

⑨ [CAM] tab (page 24)

Camera operations such as zooming, focusing, auto functions, etc. can be performed on this tab.

[Control] button

The following operation panel will be displayed when the [Control] button is clicked.



① [Multiscreen select] box

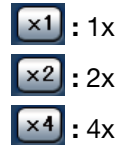
Images from up to 4 cameras can be displayed simultaneously on a multi-screen. Each time the button is clicked, images from the 4 cameras registered as a group in advance will be displayed on a 4-screen. (Page 51)

② [Sequence] box

When this button is clicked, the camera channels will be switched automatically and images from them will be displayed sequentially according to the settings configured in advance. The indicator on the button will light (green) during sequence display. (Page 55)

③ [EL-zoom] box

Camera images will be displayed in the proportion of the clicked zoom ratio button.



④ [Search] box

[Search] button

Use this button to search the recorded images. Search results will be displayed in list form in the list display area.

(Refer to the operating instructions (PDF).)

[Area select] button

Use this button to select a disk on which recorded images are to be played/searched. (Refer to the operating instructions (PDF).)

⑤ [Copy] box

The "Data copy" window will be displayed by clicking this button. Copying recorded images onto the copy area of the hard disk drive can be performed on the "Data copy" window.

⑥ [Log] box

Logs will be displayed in list form in the list display area.

[Error log] button

The error logs will be in list form in the list display area.

[Access log] button

The time and date when logged in/out of the recorder, the user name, and the IP address will be displayed. The access logs will be displayed in list form in the list display area.

[Event log] button

The time and date of event occurrences and their details will be displayed. The event logs will be displayed in list form in the list display area.

[Network log] button

The network logs will be displayed in list form in the list display area.

⑦ List display area

Number of listed data (recording events or logs)

Total number of listed data (recording events or logs) will be displayed. When the total number of the listed data is more than 10 000, the ">10000" indication will be displayed.

[All list] button

Cancels filtering and lists all recording events.

[Refresh] button

Updates the list.

[Prev page] button

Displays the previous page of the list.

[Next page] button

Displays the next page of the list.

[Time & date]

Start time of recording will be displayed.

[Ch]

A camera channel used for recording will be displayed.

[Rec]

Recording mode will be displayed.

HDD (hard disk drive)

The hard disk drive number in which the corresponding recorded images are stored will be displayed.

[Info]

Additional information will be displayed.

 : Audio is attached to images.

⑧ [Zoom in] button

Enlarges live or recorded images displayed in the image display area.

Live images and recorded images will be displayed in the size selected for the aspect ratio setting.

Refer to page 32 for further information about the aspect ratio setting.

Note:

- The recording event list will be displayed when the [Refresh] button is clicked or when performing the search or the area selection. Refer to the operating instructions (PDF) for further information about the search and the area selection.
- The [All list] button is unavailable during playback. Start operation after stopping the playback.
- When using many cameras, the recording event list may not be displayed in the recording start time order of each camera channel.

[Cam. select] button

The following operation panel will be displayed when the [Cam. select] button is clicked.



① [Multiscreen select] box

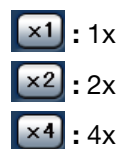
Images from up to 4 cameras can be displayed simultaneously on a multi-screen. Each time the button is clicked, images from the 4 cameras registered as a group in advance will be displayed on a 4-screen. (Page 51)

② [Sequence] box

When this button is clicked, the camera channels will be switched automatically and images from them will be displayed sequentially according to the settings configured in advance. The indicator on the button will light (green) during sequence display. (Page 55)

③ [El-zoom] box

Camera images will be displayed in the proportion of the clicked zoom ratio button.



④ [Cam. select] box

When clicking "WJ-ND400", a group title (title of a group consisted of the 4 registered cameras) will be displayed. Refer to page 54 for further information about the camera group settings.

When clicking the group title, a list of the cameras consisting of the group will be displayed. Clicking the camera title will display images from the selected camera channel on a 1-screen in the image display area.

[Setup] button

The following operation panel will be displayed when the [Setup] button is clicked.



① **[Quick] button**

Displays the "Quick" page that contains the minimum required settings to be configured to operate the recorder.

② **[Basic] button**

Displays the "Basic" page that contains the basic system settings and the time & date settings.

③ **[Emergency rec.] button**

Displays the "Emergency rec." page that contains the settings relating to the emergency recording.

④ **[Event] button**

Displays the "Event" page that contains the settings relating to the event actions to be taken at an event occurrence for each event type (site alarm, terminal alarm, command alarm).

⑤ **[Schedule] button**

Displays the "Schedule" page that contains the settings relating to the schedule recording and the event action.

⑥ **[Camera] button**

Displays the "Camera" page that contains the network settings of cameras, and the settings relating to the group and the sequence display.

⑦ **[Server] button**

Displays the "Server" page that contains the settings of the NTP server, FTP server, mail server and proxy server.

⑧ **[Network] button**

Displays the "Network" page that contains the network settings.

⑨ **[User mng.] button**

Displays the "User mng." page that contains the settings relating to authentication.

⑩ **[Maintenance] button**

Displays the "Maintenance" page that contains the information display pages (about the recorder, disk and network), and the settings relating to the hard disk drives and saving/loading of the settings.

⑪ **[Config.] button**

Displays the "Disk config." page that contains the disk partition information display page, the settings relating to formatting of the hard disk drives.

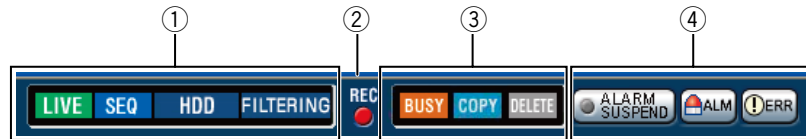
Important:

- When any of edited settings are applied, all login users will forcibly be logged out.
-

⑫ **[Help] button**

The "Help" page will be displayed.

Status display area



① The status of the recorder such as the status, playback status, etc. will be displayed.

- : Indicates that live images are being displayed.
- : Indicates that playback images are being displayed.
- : Indicates that reverse playback images are being displayed.
- : Indicates that fast playback images are being displayed.
- : Indicates that fast reverse playback images are being displayed.
- : Indicates that a paused image is being displayed.
- : Indicates that recorded images/audio are being downloaded.
- : Indicates that downloading of recorded images/audio is completed.

[Step 1] - [Step 7]: Indicates the playback speed.

- : Normal playback speed (1x)
- : Approx. 4x playback speed
- : Approx. 8x playback speed
- : Approx. 16x playback speed
- : Approx. 32x playback speed
- : Approx. 48x playback speed
- : Approx. 96x playback speed

- : Indicates that the sequence display is being performed.
- : Indicates that playback of recorded images stored in the normal recording area or the event recording area of the hard disk drives on the recorder is being selected.

- : Indicates that the HDD copy area is being selected.
- : Indicates that SD memory data is being obtained.
- : Indicates that data recovery in the RAID mode is being performed.
- : Indicates that the recording events are being filtered. Refer to the operating instructions (PDF) for further information about filtering of the recording event list.

② [REC] indicator

Indicates the status of recording.

- : Indicates that recording is being performed.
- : Indicates that recording is not being performed.

③ Indicates the following statuses.


- : Indicates that the camera is not operable because a user with higher priority is currently operating the camera.
- : Indicates that copying is being performed.
- : Indicates that deletion of recorded images is being performed.

④ Indicates information about events and errors.


[ALARM SUSPEND] button

- : Clicking this button will temporarily disable alarm actions. (Refer to the operating instructions (PDF).)
- : Indicates that an alarm is being suspended.

[ALM] button

 : Indicates an event occurrence. The alarm action will be canceled by clicking this button. (Refer to the operating instructions (PDF).)

[ERR] button

 : Indicates an error occurrence. The error action will be canceled by clicking this button. Refer to the operating instructions (PDF) for further information.

Note:

- Once an emergency recording starts, it will not stop even by clicking the [ALM] button. It will stop only when "Continue" is selected for "Recording duration" on the "Emergency rec." page.

Playback point operation area



- ① **Indicates the start time and the end time of recorded images to be downloaded.**

[Start]: Designate the start time from when recorded images are to be downloaded.

[End]: Designate the end time till when recorded images are to be downloaded.

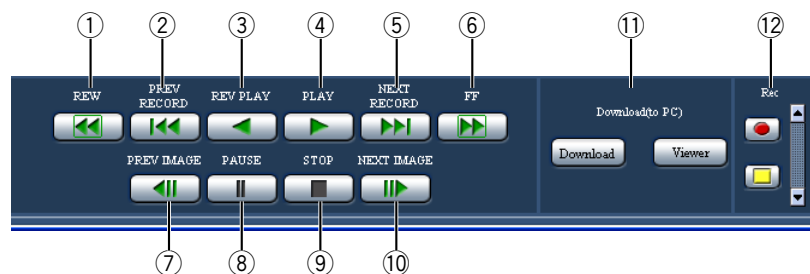
- ② **[Go to date]**

Designate the desired time and date from when playback of recorded images is to start.

- ③ **[Go to last]**

Click this button to skip to the latest recorded image from the camera channel currently being displayed and start playback.

[HDD] tab



- ① **[REW] button**



Plays recorded images in reverse at high speed. Playback speed of fast reverse playback will change in the following order each time this button is clicked: Step2 (Approx. 4x) → Step3 (Approx. 8x) → Step4 (Approx. 16x) → Step5 (Approx. 32x) → Step6 (Approx. 48x) → Step7 (Approx. 96x)

- ② **[PREV RECORD] button**

Skips to the previous recorded image and plays it.

- ③ **[REV PLAY] button**

Plays recorded images in reverse.

- ④ **[PLAY] button**
Plays recorded images.
- ⑤ **[NEXT RECORD] button**
Skips to the next recorded image and plays it.
- ⑥ **[FF] button**
Plays recorded images at high speed.
Playback speed of fast playback will change in the following order each time this button is clicked:
Step2 (Approx. 4x) → Step3 (Approx. 8x) →
Step4 (Approx. 16x) → Step5 (Approx. 32x) →
Step6 (Approx. 48x) → Step7 (Approx. 96x)
- ⑦ **[PREV IMAGE] button**
The previous frame will be displayed when this button is clicked during playback/pause.
- ⑧ **[PAUSE] button**
Playback will be paused when this button is clicked during playback.
Playback will resume when this button is clicked during pause.
- ⑨ **[STOP] button**
Stops playback and displays live images.
- ⑩ **[NEXT IMAGE] button**
The next frame will be displayed when this button is clicked during playback/pause.
- ⑪ **[Download (TO PC)] box**
Downloads the recorded images currently being played to a PC.
[Download] button: Downloads recorded images and audio.
[Viewer] button: Downloads the viewer software that can play downloaded images.
- ⑫ **[Rec] box**
The recording button and the recording stop button will be displayed when the Up button is clicked.
The recording button and the recording stop button will be hidden when the Down button is clicked.
-  **Recording button:** Starts manual recording.
-  **Recording stop button:** Stops manual recording.

Important:

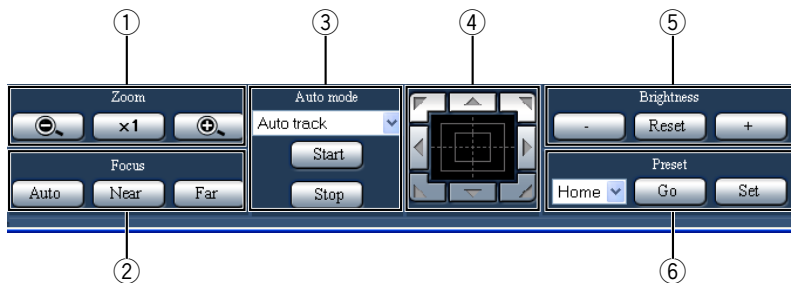
- To display the recording button and the recording stop button, hold down the Up button until they appear.
-

Note:

- When playing MPEG-4 images, results from operating the some buttons will be as follows.
[Go to date] button: Playback sometimes may start from a point several seconds after the designated time and date.
[REV PLAY] button: Some frames of recorded images will not be displayed. Reverse playback will be performed with the set refresh interval of the camera.
[PLAY] button (during playback): When the [PLAY] button is clicked during playback, images will be skipped for several seconds.
[PREV IMAGE] button: Some frames of recorded images will not be displayed. Reverse frame by frame playback will be performed with the set refresh interval of the camera.
[FF]/[REW] button: Some frames of recorded images will not be displayed. Fast playback/fast reverse playback will be performed with the set refresh interval of the camera.
[Download] button (during playback): Download may start from a point several seconds before the designated start time and end at a point several seconds after the designated end time.
-

[CAM] tab

When displaying live images from a camera with the panning/tilting function, it is possible to operate the camera (pan/tilt, zoom, focus, brightness, preset position and auto function). It may be impossible to operate the camera or some functions may be inoperable depending on the model of the camera.



① [Zoom] box

Zooming can be adjusted by clicking the [-] button or the [+] button. Click the [x1] button to reset zoom.

② [Focus] box

Focusing can be adjusted by clicking the [Near] button or the [Far] button.

The auto focus function can be performed by clicking the [Auto] button.

③ [Auto mode] box

Activate the designated auto function of the camera. Select the auto mode function (auto track, auto pan, preset sequence, sort, or patrol) of the camera by clicking the [V] button, and then click the [Start] button. Click the [Stop] button to stop the auto mode function.

④ Control pad/buttons

Clicking the buttons around the control pad can move (pan/ tilt) a camera in the clicked direction. Clicking inside the control pad also can adjust the vertical/ horizontal position (pan/tilt) of the displayed image. Panning/ tilting speed will be faster if a clicked point gets farther from the center point of the control pad.

⑤ [Brightness] box

The brightness can be adjusted by clicking the [-] (darker) button or the [+] (brighter) button. It is possible to reset the set brightness by clicking the [Reset] button.

⑥ [Preset] box

[Go] button

Move the camera to the preset position registered in advance. Select a preset position number (Home, 1 - 256) by clicking the [V] button, and then click the [Go] button.

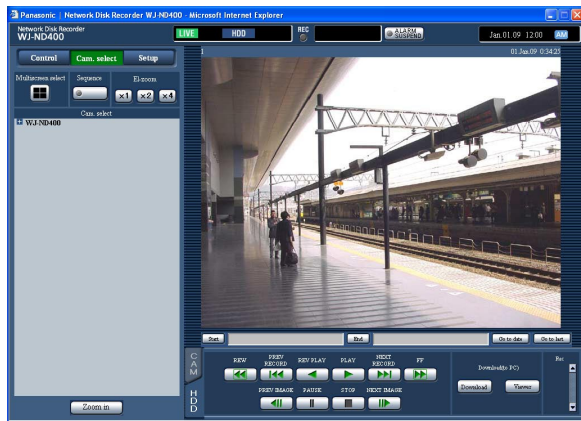
It is necessary to register preset positions in advance to move the camera to the preset positions.

[Set] button

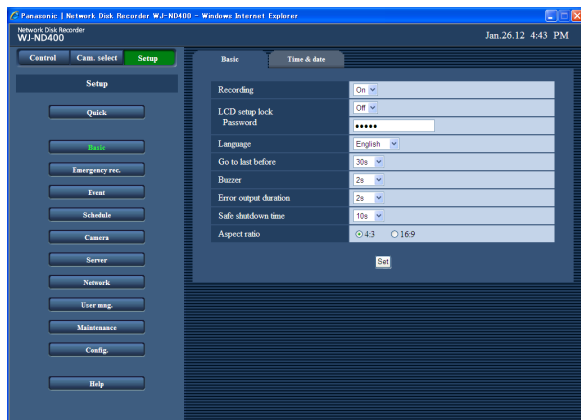
Register the camera position as a preset position by designating the desired preset position number. Select a preset position number (1 - 256) by clicking the [V] button after moving the camera to a position to be registered as a preset position, and then click the [Set] button. (It is impossible to register the position as "Home".)

Basic operation

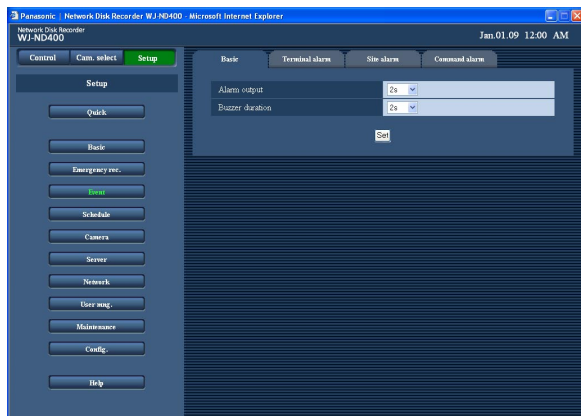
- 1 Access the recorder and display the top page of the operation window.



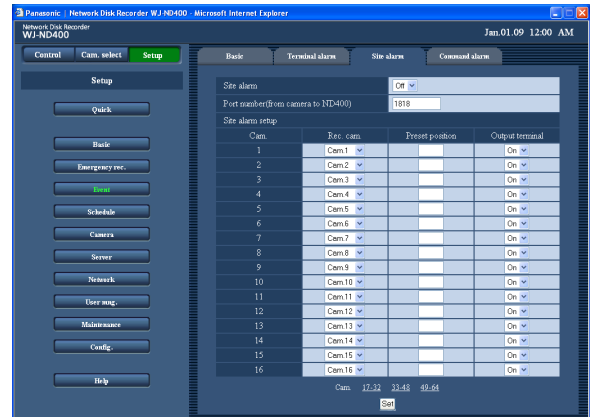
- 2 Click the [Setup] button.
The setup menu buttons will be displayed.



- 3 Click the desired setup menu button.
The setup menu page respective to the clicked setup menu button will be displayed.



- 4 Click the desired tab on the setup menu page.
The setup menu page of the clicked tab will be displayed.



- 5 Configure each setting item.
- 6 Click the [Set] button after completing each setting item.
The configured settings will be applied.
When displaying other setup menu page without clicking the [Set] button, the edited settings will not be applied.

Important:

- When any of edited settings are applied, all login users will forcibly be logged out.
- When any setting relating to the user management is edited and applied, all login users will forcibly be logged out.
- It may be impossible to record images for around 4 seconds just after clicking the [Set] button to apply the edited settings.
- Only a single user can operate the setup menu at a time. It is impossible to open the setup menu when another user is operating it.
- When the web browser is closed in the process of accessing the setup menu to open, it will become impossible to access the setup menu for around 90 seconds. When any of the setup menu buttons is clicked, the message window saying that the other user is currently operating the setup menu.

Quick settings

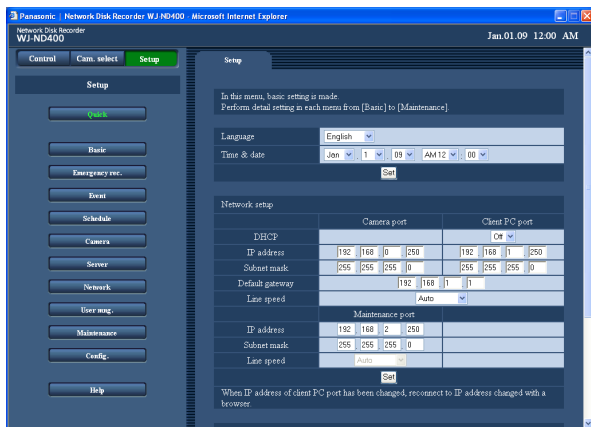
Configure the minimum settings required to operate the recorder such as the language setting, time & date, network settings, camera registration, etc.

Setup

Language/Time & date

Select the display language and set the current time and date.

- 1 Click the [Quick] button.
The "Quick" page will be displayed.



- 2 Configure each setting item.
Refer to "Setup items" mentioned below.

- 3 Click the [Set] button just below the "Time & date" setting.

Important:

- A black screen may be displayed and recording may not be performed for around 4 seconds just after the current time and date is changed by editing the time & date setting or shifting to/from summertime.

Note:

- When no camera is registered, the "Quick" page will be displayed automatically.
- There are 4 sections according to the related settings as follows; "Language/Time & date", "Network settings", "Network camera registration setup" and "Program setup". After editing the settings, click the [Set] button in each section to apply the edited settings.

Setup items

■ Language

Select the display language of the web browser from the following.

Contact your dealer for further information about the customized language (Custom).

Japanese/English (default)/Français/Español/Deutsch/Italiano/Russian/Chinese/Custom

■ Time & date

Adjust the current time and date.

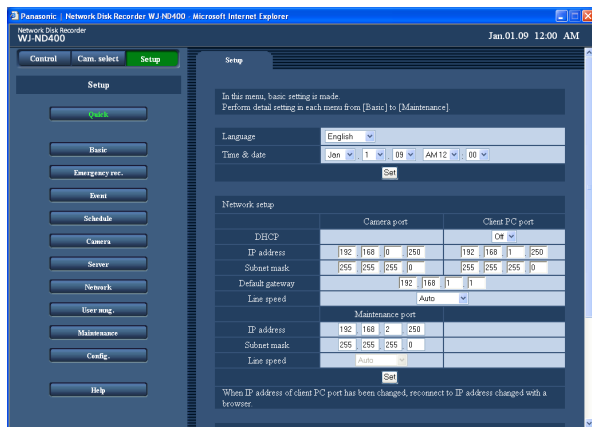
Select numbers for year, month, day, hour and minute, and click the [Set] button.

08 - 34 (year)/1 - 12 (month)/1 - 31 (day)/0 - 23 (hour)/
0 - 59 (minute)

Network settings

Configure the network settings of the recorder.

- 1 Click the [Quick] button.
The "Quick" page will be displayed.



- 2 Configure each setting item.
Refer to "Setup items" mentioned below.

Setup items

■ Network setup - Camera port/Client PC port

Configure the following setting items for each port.

[DHCP]

Select "On" or "Off" to determine whether or not to use the DHCP server.

Select "On" to obtain an IP address, a subnet mask and a gateway address from the DHCP server. Select "Off" when entering values manually.

On: Uses the DHCP server.

Off (default): Does not use the DHCP server.

[IP address] *1

When "Off" is selected for "DHCP", enter an IP address.

[Subnet mask] *1

Enter a subnet mask according to the network configuration when "Off" is selected for "DHCP".

[Default gateway] *1

Enter the address of the default gateway according to the network configuration when "Off" is selected for "DHCP".

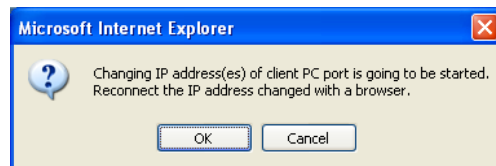
[Line speed]

The following are available for "Line speed".

Auto (default)/1000M-Full/100M-Full/100M-Half/
10M-Full/10M-Half

- 3 Click the [Set] button in the "Network setup" section.

When the IP address of the client PC port is changed, the following window will be displayed. Click the [OK] button to apply the setting.



Note:

- When the IP address of the client PC port is changed, all login users will forcibly be logged out. It is necessary for users to access the changed IP address to reconnect to the recorder.
- When the "Line speed" setting is changed and the [Set] button is clicked, the recorder will reboot.

■ Network setup - Maintenance port

[IP address] *1

Enter an IP address.

[Subnet mask] *1

Enter a subnet mask.

*1 Refer to page 11 about the default setting.

Important:

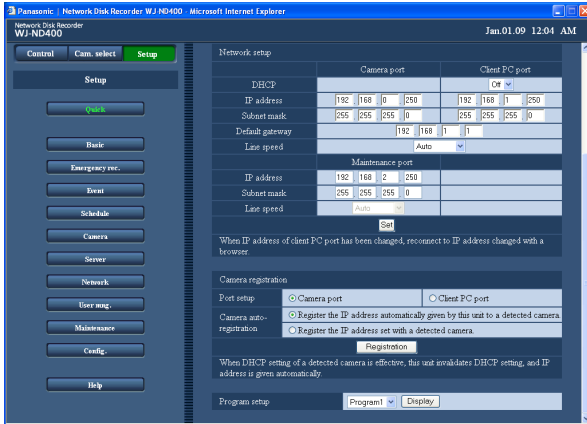
- The network settings for each port (IP address, etc.) should be configured with a different subnet.
- When "On" is selected for "DHCP" and any frame rate other than "Off" is select for "SD memory rec.", a request for writing data onto the SD memory card demanded at the startup of the recorder may fail. This error may occur when the response from the DHCP server is slow. However, a request for writing data onto the SD memory card will be accepted once the addresses have been obtained from the DHCP server.

Camera registration

Register cameras in the recorder. Up to 64 cameras can be registered.

1 Click the [Quick] button.

The "Quick" page will be displayed.



2 Select a port to which cameras are connected to detect them.

Camera port/Client PC port

3 Determine how to assign and register an IP address of the detected camera.

[Register the IP address automatically given by this unit to a detected camera]

[Register the IP address set with a detected camera]

Note:

- When selecting "Register the IP address automatically given by this unit to a detected camera", an available IP address (not used for any device) will be assigned to the detected camera. However, the IP address used for other device may be assigned depending on the network environment (such when the firewall function of Windows XP is used). If the IP address used for other device is assigned to the camera, check the IP addresses and assign an IP address to the camera manually.
- When selecting "Register the IP address automatically given by this unit to a detected camera" for a camera of which the "DHCP" setting is "On", the "DHCP" setting of the camera will be set to "Off" automatically and an IP address will be assigned newly.

- Automatic IP address assignment by selecting "Register the IP address automatically given by this unit to a detected camera" is available only when "Off" is selected for the "DHCP" setting of the recorder.
- Set "255.255.255.0" for "Subnet mask" of the network port when selecting "Register the IP address automatically given by this unit to a detected camera".
- When automatically assigning an IP address, the gateway shall belong to the same segment of the port selected in step 2. Otherwise, IP address may not automatically be assigned to a camera depending on the model.
- The HTTP port number of the camera will be "80" automatically when the IP address of the camera is registered. The values of the subnet mask and the default gateway of the camera will be set to the same values as the recorder's.

4 Click the [Registration] button.

The confirmation window will be displayed.



5 Click the [OK] button.

Detection of cameras and registration of the detected cameras will start.

The "Setting" window will be displayed in the process of the registration.



The "Camera Registration Result" window will be displayed after the registration is complete.

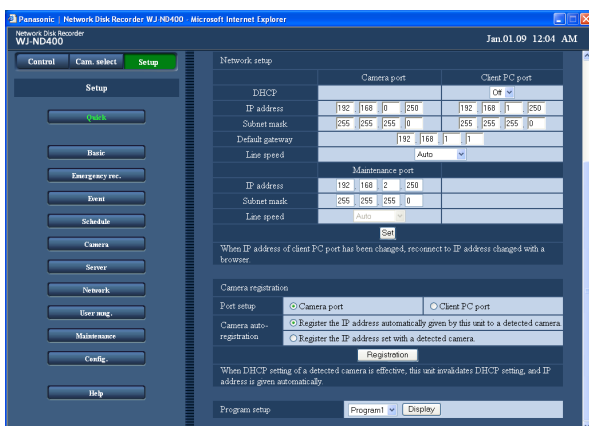


6 Check the registration result.

- Up to 64 cameras can be registered.
- Only the newly registered cameras will be displayed on the "Camera Registration Result" window. Even when 65 or more cameras are on the network, only 64 cameras will be displayed.
- When the same IP address is assigned to multiple cameras, the IP address used for multiple cameras and the MAC addresses of the cameras will be displayed in red. Make sure that the IP addresses of the cameras are all different and the same address is not used for two cameras or more.

7 Click the [OK] button.

Registration of the cameras will complete.



Important:

- When the [Registration] button is clicked after selecting "Register the IP address automatically given by this unit to a detected camera", IP addresses will be assigned to all the detected cameras. Start registration of the camera after confirming that no problem will occur when some cameras are already in operation.

Note:

- When the desired camera is not detected or when the settings of a camera are required to be changed, configure the settings on the "NW camera" page (page 49).
- When the camera registration is complete, all login users will forcibly be logged out.
- All recordings will stop in the process of the camera registration.
- Camera auto-registration will not work with cameras in the different subnet via a router.
- To enhance the security, a camera can be detected for only 20 minutes after turning on the power of the camera when the default IP address is changed depending on the model of the camera. Refer to the operating instructions of the camera in use for further information.
- The compression method of the registered camera will be set to "JPEG" or "M-JPEG" automatically.

Setup items

■ Port setup

Select a port to which the camera to be registered is connected.

Camera port (default)/Client PC port

■ Camera auto-registration

Determine how to assign IP addresses to the detected cameras.

"Register the IP address automatically given by this unit to a detected camera" (default)

"Register the IP address set with a detected camera"

Note:

- When "On" is selected for "DHCP" of "Port setup" of the recorder, it is impossible to assign IP addresses to the detected cameras.

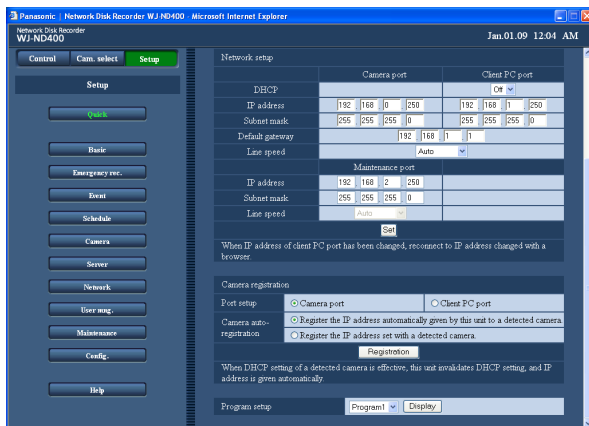
Program setup

Select a program that determines basic operation of the recorder such as the live image transmission rate, recording rate, etc.

- 1 Click the [Quick] button.
The "Quick" page will be displayed.

- 2 Configure each setting item.
Refer to "Setup items" mentioned below.

- 3 Click the [Set] button.



Setup items

■ Program setup

Select a program.

Program 1 (default) - Program 8

Click the [Display] button to check the detailed settings of the selected program.

Refer to the "Program" section on page 43 for information on how to set programs.

Note:

- When the camera registration is performed on the "Quick" page, the live image transmission rate and the recording rate (manual recording) of "Program 1" - "Program 8" will be set to "1 ips".

Basic settings

Configure the settings required for the basic operations of the recorder.

Basic

Configure the basic system settings.

1 Click the [Basic] button.

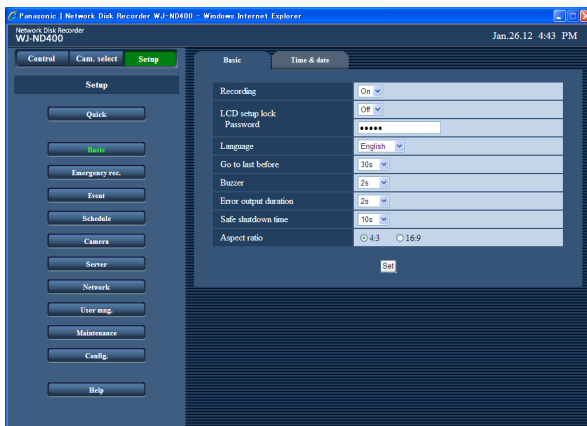
2 Click the [Basic] tab.

The "Quick" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Recording

Select "On" or "Off" to determine enable or disable the recording function of the recorder.

When "Off" is selected, recording will not be performed. Select "On" normally, except when it is necessary to stop recording forcibly.

■ LCD setup lock

Select "On" or "Off" to determine whether or not to lock the buttons on the front panel (key lock).

When "On" is selected, the buttons will be locked again when no operation using the buttons is performed for around 1 minute even releasing the key lock by entering the password from the front panel.

■ Password

Enter the password to release the key lock.

Enter up to 5 numeric characters.

■ Language

Select the display language of the web browser from the following.

Contact your dealer for further information about the customized language (Custom).

Japanese/English (default)/Français/Español/Deutsch/Italiano/Russian/Chinese/Custom

■ Go to last before

Select a time to be skipped to when the [Go to last] button is clicked during playback from the following. 5s/10s/30s (default)/1min/5min (before the latest recorded image)

■ Buzzer

Determine whether or not to sound the buzzer at an error occurrence.

Off: The buzzer will not sound at an error occurrence.

2s (default)/5s/10s/20s/30s/1min: The buzzer will continue sounding for the selected duration.

Ext: The buzzer will continue sounding until the [BUZZER STOP] button on the front panel is pressed or until the [ERR] button on the operation window is clicked.

■ Error output duration

Set the duration of the error output that is issued to an external device at an error occurrence. Refer to the installation guide for further information about the error output.

Off: The error output will not be output at an error occurrence.

2s (default)/5s/10s/20s/30s/1min: The duration of error output will be output for the selected duration.

Ext.: The error output will continue until the [ERR] button on the operation window is clicked.

■ Safe shutdown time

Select a wait time for the shutdown process to start after an outage detection signal is provided to the recorder.

10s (default)/20s/30s/1min/2min/3min/4min/5min

■ Aspect ratio

Set the aspect ratio to display the images in the web browser window.

4:3 (default)/16:9

Time & date

Configure the time and date settings of the recorder.

1 Click the [Basic] button.

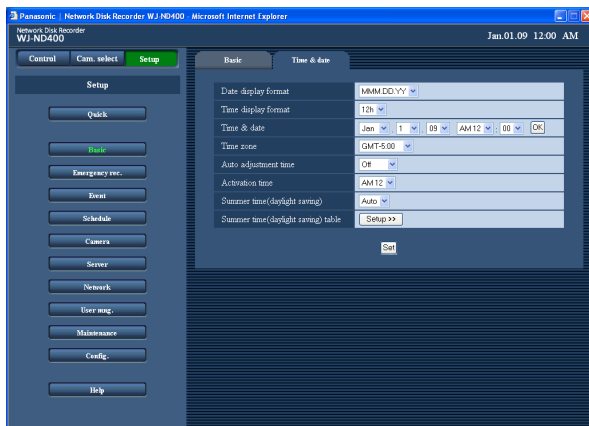
2 Click the [Time & date] tab.

The "Time & date" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Date display format

Select a date display format from the following.

(Ex. April 1st., 2009)

YY.MM.DD: 09.04.01

MMM.DD.YY: APR.01.09

DD.MMM.YY: 01.APR.09

Default: MMM.DD.YY (NTSC), DD.MMM.YY (PAL)

■ Time display format

Select a time display format from the following.

(Ex. 3 o'clock in the afternoon)

12h: 3:00PM

24h: 15:00

Default: 12h (NTSC), 24h (PAL)

■ Time & date

Set the current time and date.

Select numbers for year, month, day, hour and minute, and click the [Set] button. The selected time and date will start from the moment when the [Set] button is clicked.

09 - 34 (year)/1 - 12 (month)/1 - 31 (day)/0 - 23 (hour)/0 - 59 (minute)

■ Time zone

Set the time zone of the camera.

GMT-12:00 - GMT+13:00

Default: GMT-5:00 (NTSC), GMT+0:00 (PAL)

■ Auto adjustment time

Select a method of auto clock adjustment from the following.

Off (default): Does not adjust clock automatically.

Slave: Receives a signal from the master unit and adjusts the clock of the recorder.

Master: Supplies a signal from the ALARM/CONTROL connector on the rear panel to the connected devices and the devices will adjust their clocks with reference to the clock of the recorder.

■ Activation time

Set the time to start the auto clock adjustment.

When "Master" is selected for "Auto adjustment time", set the time for a signal to supply from the ALARM/CONTROL connector (time adjustment I/O, pin no. 20) at the rear of the recorder.

When "Slave" is selected, set the time for the recorder to receive a signal from the master unit and adjust the clock.

■ Summer time(daylight saving)

Determine how to shift to/from the summer time from the following. During summer time, the time will be displayed with an asterisk (*).

Out (default): Summer time will not be applied.

Auto: Applies summer time in accordance with the setting of summer time.

■ Summer time(daylight saving) table

Set the start (In)/end (Out) time and date of summer time.

When the [Setup >>] button is clicked, the following window will be displayed.

		Month	Day	Year	Hour	Minute
1	In	Mar	9	08	AM 2	00
	Out	Nov	2	08	AM 2	00
2	In	Mar	8	09	AM 2	00
	Out	Nov	1	09	AM 2	00
3	In	Mar	14	10	AM 2	00
	Out	Nov	7	10	AM 2	00
4	In	Mar	13	11	AM 2	00
	Out	Nov	6	11	AM 2	00
5	In	Mar	11	12	AM 2	00
	Out	Nov	4	12	AM 2	00
6	In	Mar	10	13	AM 2	00
	Out	Nov	3	13	AM 2	00
7	In	Mar	9	14	AM 2	00
	Out	Nov	2	14	AM 2	00
8	In	Mar	8	15	AM 2	00
	Out	Nov	1	15	AM 2	00
9	In	Mar	13	16	AM 2	00
	Out	Nov	6	16	AM 2	00
10	In	Mar	12	17	AM 2	00
	Out	Nov	5	17	AM 2	00

Set

Set the start time and date and the end time and date of summer time. Select the last 2 digits of the year.

Up to 10 settings can be set.

Click the [Set] button after completing the settings, and close the window by clicking the [X] button at the top right of the window.

Important:

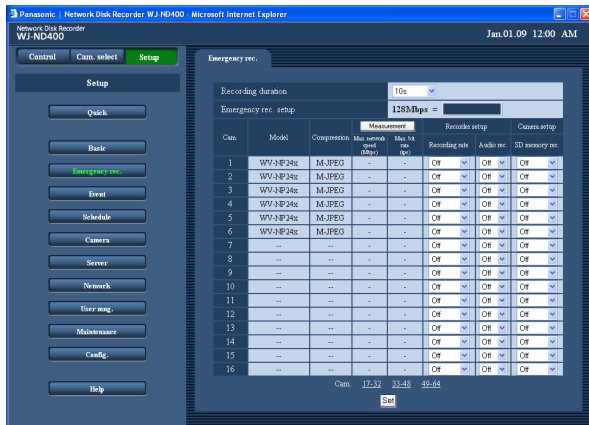
- A black screen may be displayed and recording may not be performed for around 4 seconds just after configuring/editing the following settings.
 - When the current time and date setting is configured/edited
 - When the summer time is applied to the current time
 - When "Slave" is selected for "Auto adjustment time" and the clock of the recorder is adjusted (However, when an emergency recording or an event recording is being performed, the clock will not be adjusted.)

Emergency recording

Configure the settings relating to emergency recording such as recording duration, recording rate, etc. Refer to the installation guide for further information about the emergency recording.

1 Click the [Emergency rec.] button.

The "Emergency rec." page will be displayed.



2 Configure each setting item.

Refer to "Setup items" mentioned below.

To display the setting page of the camera whose camera number is not on the current page, click the desired camera channel number range displayed above the [Set] button.

When displaying other setting page of the camera by clicking the camera channel number range above the [Set] button, the settings edited on the currently displayed setting page will be saved and applied.

3 Click the [Set] button.

Important:

- It may be impossible to record images for around 4 seconds just after an emergency recording ended.

Setup items

■ Recording duration

Set the recording duration of the emergency recording. The following are available for the recording duration. 2s/5s/10s (default)/20s/30s/1min/3min/5min/10min/30min/Manual/Continue

Manual: Recording will be performed as long as the emergency recording input signal is being supplied. Recording will be continued at least for 8 seconds.

Continue: Recording will not stop until the [ALM] button is clicked.

■ Model

The model of the network camera will be displayed.

■ Compression

The compression method of the selected camera will be displayed.

Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

[Measurement]

■ Max. network speed (Mbps)

The maximum network speed of the network currently accessing will be displayed when the [Measurement] button is clicked.

■ Max. bit rate (ips)

The maximum recording rate of the network currently accessing will be displayed when the [Measurement] button is clicked.

Note:

- When the recording rate is displayed in red, it may be impossible to transmit live images and record images at the current recording rate.

Recorder setup

■ Recording rate

Set the recording rate of the emergency recording for each camera channel. The following are available for the recording rate.

Off (default)/1ips/2ips/3ips/5ips/10ips/15ips/All/I-Frame

Note:

- The available recording rates differ depending on the compression method of the camera. Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

■ Audio rec.

Select "On" or "Off" to determine whether or not to record audio together with images.

Audio can be recorded together with images. It is impossible to record audio without images.

Audio recording is available only when using cameras that support the audio recording function.

Refer to the "readme.txt" on the provided CD-ROM for information about the camera models that support the audio recording function.

Camera setup

■ SD memory rec.

Determine whether or not save images on the SD memory card when the network communication is disconnected during emergency recording.

The following recording rates are available for "SD memory rec.".

Off (default)/0.1ips/0.5ips/1ips

Refer to page 36 for further information about the SD memory recording.

Note:

- The recording rate setting for "SD memory rec." is available only for cameras that support the SD memory recording function and their image compression method is set to "M-JPEG".
- Do not set the recording rate of the SD memory recording for the same camera with multiple recorders.
- It is impossible to simultaneously perform audio recording and the SD memory recording.
- When the "SD memory rec." setting on the "Emergency rec." page is set to other than "Off" for a camera channel, the "Audio rec." setting on the "Emergency rec." page for this camera channel will be set to "Off" automatically.

Important:

- If receiving a signal input that triggers an emergency recording when the communication between the recorder and the camera is not established, the SD memory recording will not be performed (since the camera cannot recognize the trigger of the emergency recording).
- When selecting "On" for "Audio rec.", make sure that the settings of the camera are configured to transmit audio. Set also the audio bit rate of the camera to "32kbps".

- When the audio bit rate of the camera is changed during operation, set the "Audio rec." setting of the recorder to "Off" once, and then set to "On" again.
- Audio may be interrupted depending on the audio transmission interval setting of the camera. Change the settings of the camera according to the network environment.
- Audio may be interrupted depending on the recording rate setting. Change the recording rate setting according to the network environment.
- To record audio, select "Mic input" or "Interactive (Full-duplex)" for the "Audio transmission/reception" setting of the camera. "Interactive(Full-duplex)" may not be available depending on the model or version of the camera. Refer to the operating instructions of the camera in use for further information.
- Audio will be recorded regardless of the screen pattern (1-screen, multi-screen).

[Measurement] button

It is possible to check if the set recording rate and transmission rate are appropriate for the network in use by clicking the [Measurement] button. When the recording rate or the transmission rate is displayed in red, it may be impossible to transmit live images or record images at the current rate. It will take around 90 seconds to check.

- When the result value is beyond the maximum network speed of the recorder, the following may occur due to the heavy network traffic:
 - Some images to be recorded may not be done.
 - Some live images to be displayed may not be done.
 - Some alarms to be issued may not be done.
 - Operational response may become slow.
 - The recorder may reboot.
- Even when the result value is below the network speed (128 Mbps as indication), the above problems may occur depending on number of the connected cameras and PCs.

Important:

- Network traffic changes every moment. In any circumstances, the result value should be less than the maximum network speed of the recorder.
 - In the process of the measurement, recording, playback, live image display and copying will stop.
-

Note:

- Other users currently accessing the recorder will forcibly be logged out. They need to log in to the recorder again after the measurement.
- The result value is the reference value. Depending on the network traffic, different result value may be displayed even when the [Measurement] button is clicked without changing any setting. Depending on the network traffic or other causes, the following may occur.
 - Live images are not transmitted as configured
 - Images are not recorded as configured
 - Response of the web browser becomes slow
 - The web browser is disconnected.
 - Recording cannot be performed

We make no guarantee for any damages incurred by recording malfunction or error occurrence regardless of what the cause may be.

SD memory rec.

Function featured in some Panasonic's cameras that saves images on the SD memory card on the camera when communication with the camera failed in the period set for the schedule recording of the recorder.

Recording rate setting

The SD memory recording is available only when the camera has this function and "M-JPEG" is selected for compression type of the "Model/Compression" setting on the setup menu of the recorder.

The recording rate of the SD memory recording can be set for each camera channel. (Page 43)

The start time of the SD memory recording varies depending on the set recording rate.

The recording rate for "SD memory rec." should be less than the recording rate set for the emergency recording.

Note:

- When setting the recording rate of the SD memory recording, make sure that "Use" is selected for the "SD memory card" setting of the camera. When "Not use" is selected for the "SD memory card" setting of the camera or when no SD memory card is inserted in the SD memory card slot of the camera (including imperfect insertion), the error message will be displayed several times a day and images may not be recorded for around 20 seconds during the error message display.
-

Obtain image recorded on the SD memory card

It is possible to obtain images recorded on the SD memory card of the camera and save them on the hard disk drive of the recorder.

It is also possible to check if images are currently being obtained or not in the "Status display".

Images on the SD memory card will be obtained at the following time.

At a quarter past the hour (0:15, 1:15 ... 23:15)

Important:

- When the communication between the camera and the recorder is disconnected during an emergency recording, images will be saved on the SD memory card of the camera at the set recording rate.
 - If receiving an alarm signal that triggers an emergency recording or getting to the start time of the schedule recording when the communication between the recorder and the camera is not established, the SD memory recording will not be performed.
 - Do not set the recording rate of the SD memory recording for the same camera with multiple recorders.
 - The recording time of the obtained recorded images (SD memory data) will be displayed based on the clock of the camera. It is recommended to synchronize the time and date of the cameras and the recorder using the NTP server, etc. When the time and date of the cameras and the recorder are not synchronized, the SD memory recording may sometimes fail.
 - When performing the emergency recording after changing the recording conditions of multiple cameras, start of recording may be delayed up to 6 seconds (when performing recording images from 64 cameras simultaneously).
-

Note:

- Depending on the gap time between the schedules or on the total data size of the SD memory data to be obtained, it may be impossible to obtain all images to be obtained at one time.
 - In the following cases, images will not be obtained. During playback, HTTP download, emergency recording, and external recording.
 - The SD memory data obtainment will be canceled when any of the following occurs in the process of the obtainment.
Login/Emergency recording/External recording/
Daylight saving time shift
 - Some images failed to obtain can be obtained at the next obtainment.
-

Event

Configure the settings of event recording that is to be performed at an event occurrence. Event recording includes the pre-event recording (records images before an event occurs) and post-event recording (records images after an event occurs).

How the event action is taken

About events

In this product, "event" is defined as phenomenon which triggers a specific action (event action) in the recorder.

This product regards reception of a terminal alarm, a command alarm, and a site alarm as an "event".

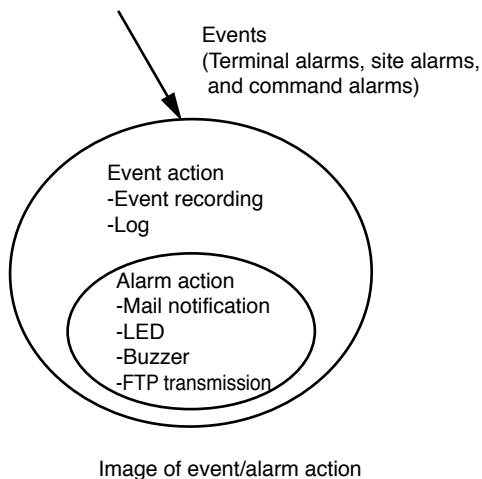
For example, when the recorder receives a site alarm issued by a camera, the recorder regards it as an event occurrence.

About the event action

When an event occurs, the recorder will take a specified event action.

The following actions will be taken as the event actions according to the settings.

- Record images/audio
 - Record logs
 - Notify of an event occurrence (by mail, LED, buzzer, image transmission to a FTP server, etc.)
- Notifications of an event occurrence are described as "alarm action" in these operating instructions.



The recorder will take an event action when the following event occurs.

Terminal alarm: When a signal from an external alarm device such as a door sensor is supplied to the alarm input terminal (ALARM connector on the rear of the recorder), it will be regarded as a terminal alarm.

Command alarm: When receiving a command from a PC via a network, it will be regarded as a command alarm.

Site alarm: When receiving a Panasonic alarm protocol from a network camera, it will be regarded as a site alarm.

The following are the event actions and their descriptions.

- Start recording.
Recording will start according to the settings configured on the setup menu such as the recording rate, the recording duration, etc. Images recorded before an event occurrence can be associated with images recorded by the corresponding event recording so that images recorded at the event occurrence can be played as if the recording started before the event occurrence. (Pre-event recording) Refer to the "Program" section on page 43 for information on how to set recording rate.
- Display the event notification window
A pop-up window that notifies of an event occurrence will be displayed.
- The alarm indicator on the front panel will start blinking.
- Sounds the buzzer
The buzzer will start sounding for the duration set in advance. (Page 39)
- Move a camera to the preset position
The camera registered in advance will move to the preset position according to the settings. Refer to the operating instructions (PDF) for further information.
- Notifies of an event occurrence by sending e-mails
A mail that notifies of the event occurrence with the time and date of the event occurrence will be sent. (Alarm mail) It is possible to attach an image to the alarm mail. (Alarm image) Up to 4 destination addresses of the alarm mail can be registered. Refer to the "Mail" section on page 60 for information about the settings.
- Output signals from the ALARM/CONTROL connector on the rear of the recorder (Alarm output)
When an event occurs, a signal will be output from the ALARM/CONTROL connector on the rear of the recorder to sound an external alarm buzzer, etc. The output duration can be configured on the setup menu. (Page 39)

- Record a log
A log that contains the event type and the time and date of the event occurrence will be recorded.
(Event log)
- Send recorded images to an FTP server at an event occurrence
When an event occurs, recorded images will be continued transmitting to an FTP server automatically for the set duration from the time when the event occurred. Refer to the "Time table" section on page 47 and the "FTP" section (page 58) for information about the settings.
- Notify a PC of an event or an error occurrence using the Panasonic alarm protocol
When an event or an error occurs, information about the event/ error will automatically be notified to the registered PC according to the "Panasonic alarm protocol" setting. To receive a notification and display the contents of it, it is necessary to install the optional dedicated software*.
* Refer to the "readme.txt" on the provided CD-ROM about the dedicated software.

Basic

Set the alarm output duration and the buzzer sounding duration starting at an event occurrence (site alarm, terminal alarm and command alarm).

1 Click the [Event] button.

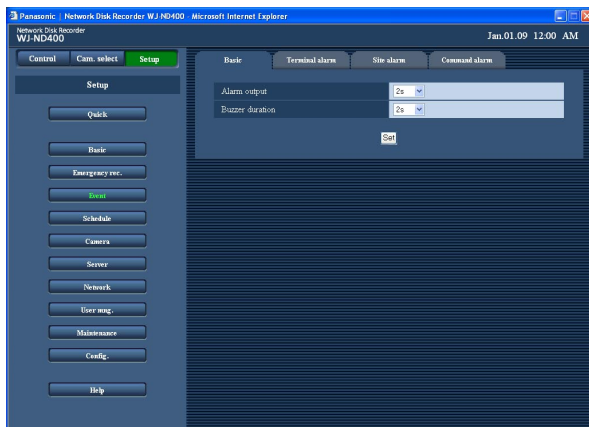
2 Click the [Basic] tab.

The "Basic" page of "Event" will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Alarm output

Select the alarm output duration.

The following are available for alarm output duration.
Off/2s (default)/5s/10s/20s/30s/1min/Ext/Rec

Off: No alarm output will be supplied.

Ext.: The alarm output will continue until the [ALM] button is clicked.

Rec.: The alarm output will be supplied during event recording is being performed.

■ Buzzer duration

Select the buzzer duration at an event occurrence. The following are available for buzzer sounding duration.

Off/2s (default)/5s/10s/20s/30s/1min/Ext/Rec

Off: The buzzer will not sound.

Ext.: The buzzer will continue sounding until the [ALM] button is clicked.

Rec.: The buzzer will sound only during the event recording is being performed.

Terminal alarm

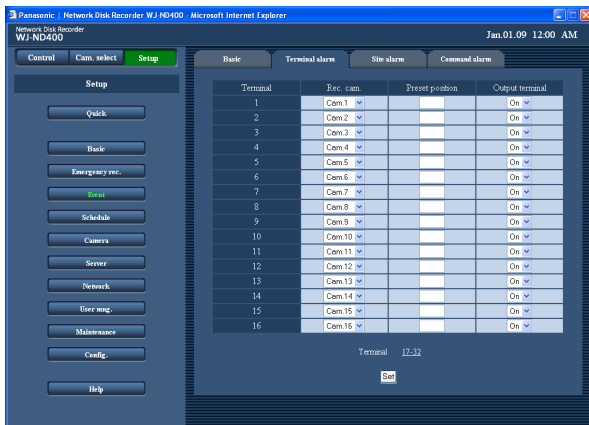
Configure the settings relating to event actions to be taken at a terminal alarm occurrence.

Refer to the operating instructions (PDF) for information on how to register the preset positions of cameras.

1 Click the [Event] button.

2 Click the [Terminal alarm] tab.

The "Terminal alarm" page will be displayed.



3 Configure each setting item.

Refer to "Setup items" mentioned below.

To display the setting page of the terminal whose number is not on the current page, click the desired terminal number range displayed above the [Set] button.

When displaying other setting page of the terminal by clicking the terminal number range above the [Set] button, the settings edited on the currently displayed setting page will be saved and applied.

4 Click the [Set] button.

Setup items

■ Rec. cam.

Select a camera channel (Cam.1 - Cam.64, "--") used for recording. When no camera channel is selected ("--"), recording will not be performed.

■ Preset position

Select a preset position (blank, 1-256) to which the camera will move upon reception of a terminal alarm for each terminal.

When no position is entered (blank), the camera does not move to any preset position.

Default: blank

■ Output terminal

Select "On" or "Off" to determine whether or not to output an alarm signal at an event occurrence.

Default: On

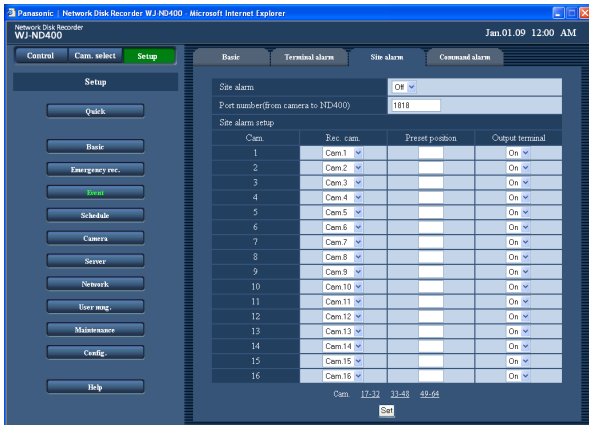
Site alarm

Configure the settings relating to event actions to be taken at a site alarm occurrence.

1 Click the [Event] button.

2 Click the [Site alarm] tab.

The "Site alarm" page will be displayed.



3 Configure each setting item.

Refer to "Setup items" mentioned below.

To display the setting page of the camera whose camera number is not on the current page, click the desired camera channel number range displayed above the [Set] button.

When displaying other setting page of the camera by clicking the camera channel number range above the [Set] button, the settings edited on the currently displayed setting page will be saved and applied.

4 Click the [Set] button.

Setup items

■ Site alarm

Select "On" or "Off" whether to validate or invalidate the site alarm.

On: Validates the site alarm.

Off: Invalidates the site alarm.

Default: Off

■ Port number(from camera to ND400)

Designate the port number to be used for receiving the site alarm.

Default: 1818

■ Site alarm setup

[Rec. cam.]

Select a camera channel (Cam.1 - Cam.64, "--") used for recording. When no camera channel is selected ("--"), recording will not be performed.

[Preset position]

Select a preset position (blank, 1-256) to which the camera will move upon a reception of a site alarm. When no position is entered (blank), the camera does not move to any preset position.

Default: blank

[Output terminal]

Select "On" or "Off" to determine whether or not to output an alarm signal at an event occurrence.

Default: On

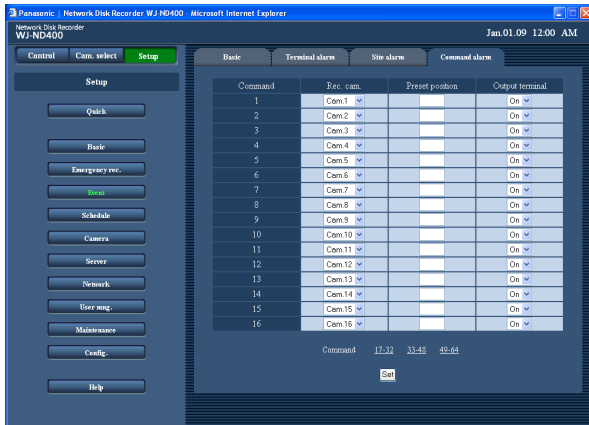
Command alarm

Configure the settings relating to event actions to be taken at a command alarm occurrence.

1 Click the [Event] button.

2 Click the [Command alarm] tab.

The "Command alarm" page will be displayed.



3 Configure each setting item.

Refer to "Setup items" mentioned below.

To display the setting page of the command alarm whose command number is not on the current page, click the desired command number range displayed above the [Set] button.

When displaying other setting page of the command by clicking the command number range above the [Set] button, the settings edited on the currently displayed setting page will be saved and applied.

4 Click the [Set] button.

Setup items

■ Rec. cam.

Select a camera channel (Cam.1 - Cam.64, "--") used for recording. When no camera channel is selected ("--"), recording will not be performed.

■ Preset position

Enter a preset position (blank, 1-256) to which the camera will move at an alarm occurrence.

When no position is entered (blank), the camera does not move to any preset position.

Default: blank

■ Output terminal

Select "On" or "Off" to determine whether or not to output an alarm signal at an event occurrence.

Default: On

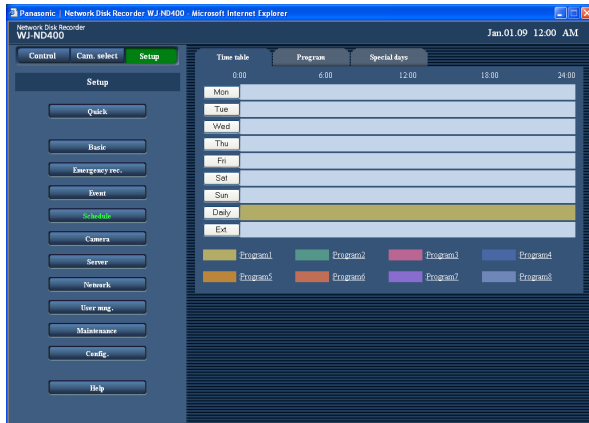
Schedule recording

Configure the settings of the schedule recording by designating a day of the week and time.

Program

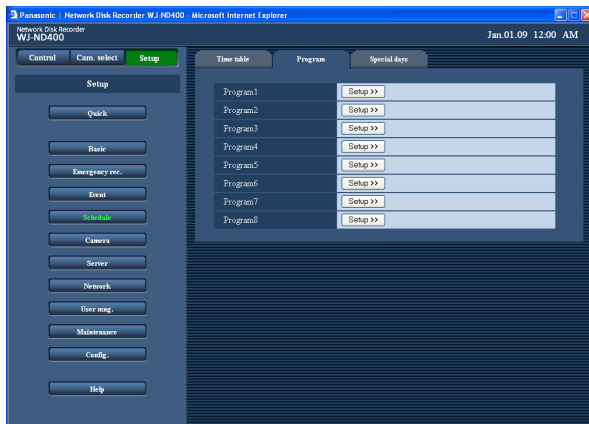
Set the settings of programs such as the live image transmission rate and the recording rate.
Up to 8 programs can be created.

1 Click the [Schedule] button.



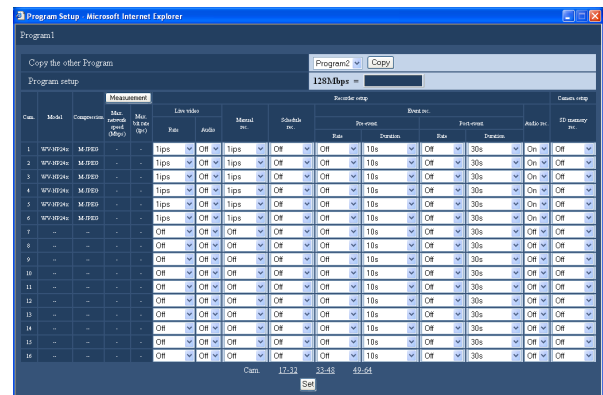
2 Click the [Program] tab.

The "Program" page of "Schedule" will be displayed.



3 Click the [Setup>>] button of the program to be created.

The "Program setup" page of the selected program will be displayed.



Description about the button on the "Program setup" page

[Copy] button: When it is necessary to copy the settings of the other program, select the desired program (source of the settings) and click the [Copy] button.

The copied settings will be applied to the currently displayed program setup page.

[Measurement] button: It is possible to check if the set recording rate and transmission rate are appropriate for the network in use by clicking this button. (Page 46)

4 Configure each setting item.

Refer to the following for further information about the settings for each item.

To display the setting page of the command whose command number is not on the current page, click the desired command number range displayed above the [Set] button.

When displaying other setting page of the camera by clicking the camera channel number range above the [Set] button, the settings edited on the currently displayed setting page will be saved and applied.

- 5** Click the [Set] button after completing the settings, and close the window by clicking the [X] button at the top right of the window.

Important:

- Only the currently displayed page (the selected program) can be copied.
-

Setup items

■ Model

The model of the network camera will be displayed.

■ Compression

The compression method of the selected camera will be displayed.

Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

[Measurement]

■ Max. network speed (Mbps)

The maximum network speed of the network currently accessing will be displayed when the [Measurement] button is clicked.

■ Max. bit rate (ips)

The maximum recording rate of the network currently accessing will be displayed when the [Measurement] button is clicked.

Recorder setup

■ Live video

• Rate

Select the live image transmission rate from the following.

Off*¹/1ips*²/2ips/3ips/5ips/10ips/15ips/All*³/I-Frame

The available live image transmission rates vary depending on the compression method of the camera. Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

• Audio

Determine whether or not to transmit audio together with live images.

Off*¹*²*³/On

Note:

- Audio can be transmitted together with images. It is impossible to transmit audio without live images.

-
- Audio transmission is available only when using cameras that support the audio transmission function.
-

■ Manual rec.

Set the recording rate of manual recording. The following are available for manual recording.

Off*¹/0.1ips/0.2ips/0.3ips/0.5ips/1ips*²/2ips/3ips/5ips/10ips/15ips/All/I-Frame*³

The available recording rates vary depending on the compression method of the camera.

■ Schedule rec.

Select the recording rate of schedule recording from the following.

Off*¹*²*³/0.1ips/0.2ips/0.3ips/0.5ips/1ips/2ips/3ips/5ips/10ips/15ips/All/I-frame

The available recording rates vary depending on the compression method of the camera.

■ Event rec. - Pre-event

• Rate

Select the recording rate of the pre-event recording from the following.

Off*¹*²*³/1ips/2ips/3ips/5ips/10ips/15ips/All/I-Frame

The available recording rates vary depending on the compression method of the camera. Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

When "M-JPEG" is set for the compression setting of the camera, it is impossible to select "All".

• Duration

Select the recording duration of pre-event recording. The following are available for the recording duration.

2s/5s/10s*¹*²*³/20s/30s/1min/3min/5min/10min/15min

Note:

- Images from a camera channel for which the pre-event recording area is created on the hard disk drive will be recorded on the created pre-event recording area. Refer to the "Format the pre-event recording area" section on page 91 for information on how to create the pre-event recording area.
 - Refer to page 46 for the recording duration of the pre-event recording without creating a pre-event recording area as references.
-

■ Event rec. - Post-event**• Rate**

Select the recording rate of the post-event recording from the following.

Off*1*2*3/1ips/2ips/3ips/5ips/10ips/15ips/All/I-Frame

The available recording rates vary depending on the compression method of the camera. Refer to the "Check/change the settings of the camera manually" section (page 51) for further information on how to configure the compression method setting of the camera.

• Duration

Select the recording duration of the post-event recording. The following are available for the recording duration.

2s/5s/10s/20s/30s*1*2*3/1min/2min/3min/5min/10min/15min/Manual/Continue

Manual: Recording will be performed only during alarm signals (site alarm, terminal alarm, command alarm) are being supplied. Recording will be continued at least for 8 seconds.

Continue: Recording will not stop until the [ALM] button is clicked.

■ Audio rec.

Determine whether or not to record audio together with images.

Off*1*2*3/On

Audio can be recorded together with images. It is impossible to record audio without images.

Audio recording is available only when using cameras that support the audio recording function.

Camera setup**■ SD memory rec.**

Determine whether or not save images on the SD memory card when the network communication is disconnected during emergency recording.

The following recording rates are available for "SD memory rec.".

Off*1*2*3/0.1ips/0.5ips/1ips

Note:

- The recording rate setting for "SD memory rec." is available only for cameras that support the SD memory recording function and their image compression method is set to "M-JPEG". Refer to page 36 for further information about the SD memory recording.
 - Do not set the recording rate of the SD memory recording for the same camera with multiple recorders.
 - It is impossible to simultaneously perform audio recording and the SD memory recording.
 - When the "SD memory rec." setting on the "Emergency rec." page is set to other than "Off" for a camera channel, the "Audio rec." setting on the "Emergency rec." page for this camera channel will be set to "Off" automatically.
-

*1 The default setting when the camera is not registered

*2 The default setting when the camera is registered (Compression method: JPEG, M-JPEG)

*3 The default setting when the camera is registered (Compression method: MPEG-4)

Important:

- Depending on the network environment or the size of images to be recorded, the recording rate and the pre-event recording duration of the recorded data may not be exactly same as the set recording rate and recording duration for the pre-event recording.
- When no pre-event recording area is created on the hard disk drive for a camera channel, the recording duration of the pre-event recording with audio will be 30 seconds.
- When "MPEG-4" is selected for the image compression method of the camera, it is recommended to set the refresh interval of the camera to "1 second". When a longer interval is set for the refresh rate of the camera, it may fail to create pre-event recording data.

- Depending on the timing of an event occurrence, the recording duration of the recorded data may not be exactly same as the set recording duration for the post-event recording.
- When selecting "On" for "Audio rec.", make sure that the settings of the camera are configured to transmit audio. Set also the audio bit rate of the camera to "32kbps".
- When the audio bit rate of the camera is changed during operation, set the "Audio rec." setting of the recorder to "Off" once, and then set to "On" again.
- Audio may be interrupted depending on the audio transmission interval setting of the camera. Change the settings of the camera according to the network environment.
- Audio may be interrupted depending on the recording rate setting. Change the recording rate setting according to the network environment.
- To record audio, select "Mic input" or "Interactive (Full-duplex)" for the "Audio transmission/reception" setting of the camera. "Interactive(Full-duplex)" may not be available depending on the model or version of the camera. Refer to the operating instructions of the camera in use for further information.
- Audio will be recorded regardless of the screen pattern (1-screen, multi-screen).

Note:

- When "MPEG-4" is selected for the image compression method of the camera, set the recording duration to 10 seconds or more.
- Refer to the following for the recording duration of the pre-event recording as references.

Recording rate of the pre-event recording	3ips	5ips	10ips
JPEG/VGA/24 KB or equivalent	50s	30s	15s
JPEG/VGA/48 KB or equivalent	25s	15s	8s
JPEG/VGA/128 KB or equivalent	10s	6s	3s

[Measurement] button

It is possible to check if the set recording rate and transmission rate are appropriate for the network in use by clicking the [Measurement] button. When the recording rate or the transmission rate is displayed in red, it may be impossible to transmit live images or record images at the current rate. It will take around 90 seconds to check.

When the result value is beyond the maximum network speed of the recorder, the following may occur due to the heavy network traffic:

- Some images to be recorded may not be done.
- Some live images to be displayed may not be done.
- Some alarms to be issued may not be done.
- Operational response may become slow.
- The recorder may reboot.

Even when the result value is below the network speed (128 Mbps as indication), the above problems may occur depending on number of the connected cameras and PCs.

Important:

- Network traffic changes every moment. Set the recording rate and the live image transmission rate plus margin by referring to the measurement result.
 - In the process of the measurement, recording, playback, live image display and copying will stop.
-

Note:

- Other users currently accessing the recorder will forcibly be logged out. They need to log in to the recorder again after the measurement.
 - The result value is the reference value.
 - Depending on the network traffic, different result value may be displayed even when the [Measurement] button is clicked without changing any setting. Depending on the network traffic or other causes, the following may occur.
 - Live images are not transmitted as configured
 - Images are not recorded as configured
 - Response of the web browser becomes slow
 - The web browser is disconnected.
 - Recording cannot be performed
 - We make no guarantee for any damages incurred by recording malfunction or error occurrence regardless of what the cause may be.
-

Time table

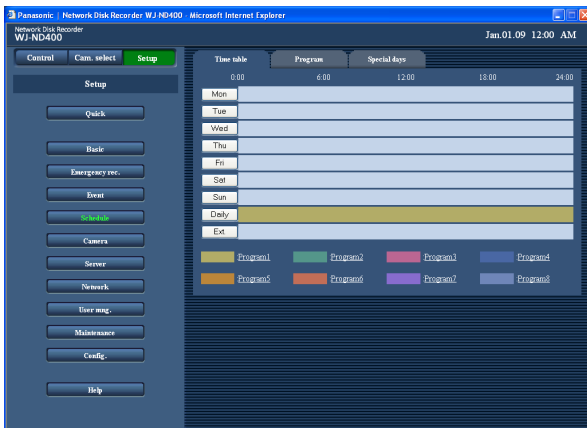
Create timetables for each day of the week, and assign a program to each timetable. Up to 6 programs can be created for each day of the week.

An external recording can be assigned to time tables. Refer to page 48 for further information about the external recording.

1 Click the **[Schedule]** button.

2 Click the **[Time table]** tab.

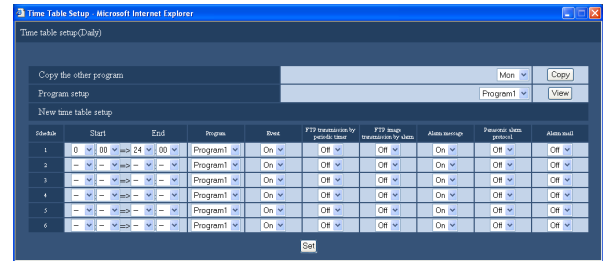
The "Time table" page of "Schedule" will be displayed.



3 Click the desired day of the week ("Mon" - "Sun"), "Daily" or "Ext." to be configured.

The "Time table setup" window respective to the clicked button will be displayed.

To copy the set time table for the other day of the week, select the desired day of the week in the "Copy the other program" box and click the [Copy] button.



Description about the button on the "Time table setup" page

[Copy] button: When it is necessary to copy the time table of the other day of the week, select the desired day of the week in the "Copy the other program" box and click the [Copy] button.

[View] button: When it is necessary to display the settings of the program, select the desired program in the "Program setup" box and click the [View] button.

4 Configure each setting item.

Refer to "Setup items" mentioned below.

5 Click the **[Set]** button after completing each setting item.

The set timetables and programs will be applied. Programs will be displayed with different colors.

Setup items

■ Start*1

Set the start time of the time zone.

--/00:00 - 23:45

Note:

- Repeat steps 1-5 to set programs of another day of the week.
- Time from "23:46" to "23:59" are unavailable for the start time.

■ End*1

Set the end time of the time zone.

--/00:15 - 24:00

■ Program

Select the desired program.

Program1 (default) - Program8

■ Event

Select "On" (default) or "Off" to determine whether or not to take event actions at an event occurrence.

When selecting "Off", no event action will be taken.

■ FTP transmission by periodic timer

Select "On" or "Off" (default) to determine whether or not to send images to the FTP server periodically. When "On" is selected, configure the settings on the "FTP" page. (Page 58)

■ FTP image transmission by alarm

Select "On" or "Off" (default) to determine whether or not to send images from an alarm camera to the FTP server at an event occurrence.

When "On" is selected, configure the settings on the "FTP" page. (Page 58)

■ Alarm message*3

Select "On" (default) or "Off" to determine whether or not to display the pop-up window that notify of an event occurrence with a message on a PC for management.

■ Panasonic alarm protocol*3

Select "On" or "Off" (default) to determine whether or not to notify of an event occurrence to a PC.

Note:

- Refer to page 69 for further information on how to set destination addresses.
- The dedicated software*2 is required for a PC to display received information.

■ Alarm mail*3

Select "On" or "Off" (default) to determine whether or not to send an alarm mail at an event occurrence. Refer to page 60 for information on how to configure the settings to use the mail function such as the settings of the mail server address and the destination mail addresses. Refer to page 93 for further information about contents of the alarm mail.

*1 The end time should be at least 15 minutes later than the start time.

*2 Refer to the "readme.txt" on the provided CD-ROM about the dedicated software.

*3 Even when "Off" is selected, the alarm message display, Panasonic alarm protocol notification and alarm mail notification will be performed at error occurrence.

External recording

It is possible to start and stop recording using the connected external switch. To record using the external switch, it is necessary to assign a program to a time zone when the external switch is to be used.

Refer to the installation guide for further information on how to connect an external switch.

When two or more recording schedules (Mon - Sun, Daily, Ext.) are overlapped, the priorities of the recording schedules are as follows.

Ext. > Mon - Sun > Daily

Important:

- Recording will not be performed even when the external switch is turned on if it is in the time range which no program is assigned. It is recommended to set the time range of the program for the external recording longer.

Special days

The timetables of a day of the week can be assigned to special days. Time tables for special days can be set for up to 30 days.

When two or more recording schedules (Mon - Sun, Daily, Ext., Special day) are overlapped, the priorities of the recording schedules are as follows.

Ext. > Special day > Mon - Sun > Daily

1 Click the [Schedule] button.

2 Click the [Special day] tab.

The "Special day setup" page will be displayed.



3 Select date and the day of the week to be set as special day.

4 Click the [Set] button.

Camera

Configure the network settings of the camera (address, port number, etc.) and the settings relating to the camera group and the sequence display.

NW camera

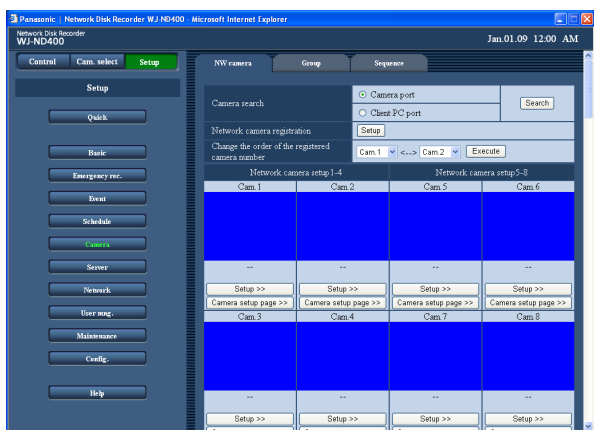
Register cameras or edit the settings of the registered cameras.

Automatic camera detection and registration

1 Click the [Camera] button.

2 Click the [NW camera] tab.

The "NW camera setup" page will be displayed.



Description about the button on the "NW camera setup" page

[Search] button: The recorder will start searching for cameras connected to the selected port.

3 Select a port to which cameras are connected to detect them.

Camera port/Client PC port

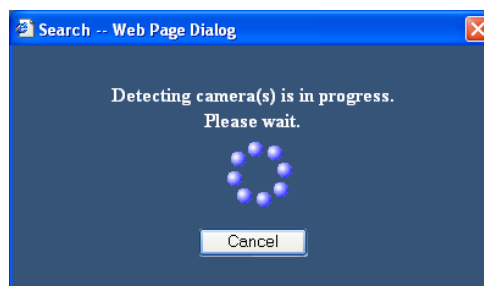
4 Click the [Search] button.

The confirmation window will be displayed.



5 Click the [OK] button.

Detection of cameras and registration of the detected cameras will start. The "Search" window will be displayed in the process of the detection.



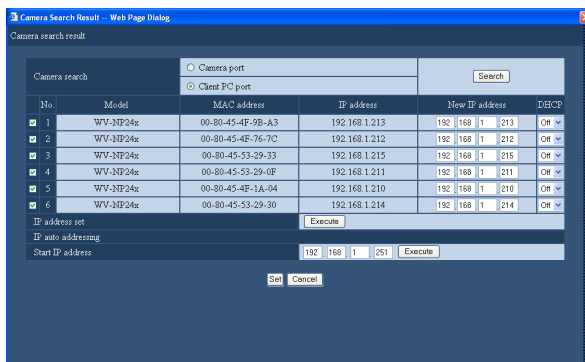
6 When the result is displayed, confirm that the checkbox of the camera to be registered is checked.

When the checkbox is not checked, check it.

Up to 64 cameras can be registered. (Up to 128 detected cameras will be displayed.)

When the checkboxes of 65 cameras or more are checked, it is impossible to register a camera newly. Keep the checkboxes of up to 64 cameras checked.

When the same IP address is assigned to multiple cameras, the IP address used for multiple cameras and the MAC addresses of the cameras will be displayed in red. Make sure that the IP addresses of the cameras are all different and the same address is not used for two cameras or more.



7 To change the IP address of the camera, enter a new IP address to the "New IP address" field and click the [Execute] button.

Note:

- When clicking the [Execute] button after entering an IP address to the "Start IP address" field, subsequent IP address not in use will be assigned automatically.
-

8 Click the [Set] button.

Registration of the cameras will complete.

When "Register the IP address automatically given by this unit to a detected camera" is selected on the "Quick" page, the IP address of the detected camera will be changed automatically.

Setup items

■ Model

The model of the detected camera will be displayed.

■ MAC address

The MAC address of the detected camera will be displayed.

■ IP address

The IP address of the detected camera will be displayed.

■ New IP address

Enter an IP address to be assigned to the detected camera.

■ DHCP

Select "On" or "Off" (default) to determine whether or not to use the DHCP server.

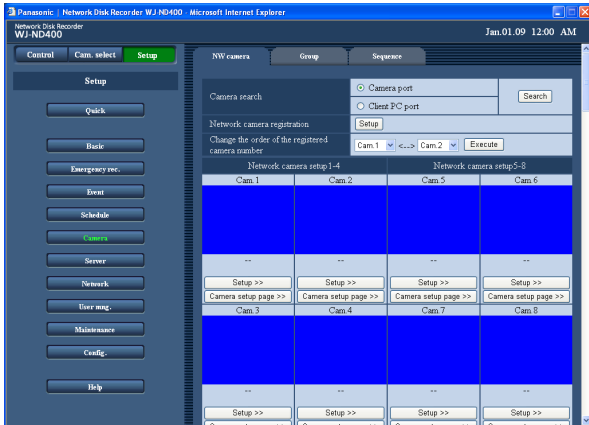
Note:

- When the detected cameras are registered, all login users will forcibly be logged out.
- All recordings will stop in the process of the camera registration.
- The cameras located in the different subnet via a router cannot be detected.
- To enhance the security, a camera can be detected for only 20 minutes after turning on the power of the camera when the default IP address is changed depending on the model of the camera. Refer to the operating instructions of the camera in use for further information.
- The compression method of the registered camera will be set to "JPEG" or "M-JPEG" automatically.

- Set "255.255.255.0" for "Subnet mask" of the port to which the camera is connected when selecting "Register the IP address automatically given by this unit to a detected camera".
 - When automatically assigning an IP address, the gateway shall belong to the same segment of the port selected in step 3 of the "Automatic camera detection and registration" section on page 49. Otherwise, IP address may not automatically be assigned to a camera depending on the model.
 - The HTTP port number of the camera will be "80" automatically when the IP address of the camera is registered. The values of the subnet mask and the default gateway of the camera will be set to the same values as the recorder's.
 - When the IP address of the camera is changed by clicking the [Execute] button, the checkboxes of camera 1-64 that are detected on the camera detection result window will be checked.
 - This recorder will assign available IP addresses to the detected cameras by executing "Start IP address". However, The IP address assigned to the other devices may be assigned to the detected cameras depending on the network environment such as an environment using the firewall function of Windows XP, etc. If the IP address used for the other device is assigned to the camera, check the IP addresses and assign an IP address to the camera manually. When the message window saying that there is no available IP address, check the settings and manually register IP addresses not in use.
 - "Start IP address" can be executed only when "Off" is selected for the "DHCP" setting of the recorder.
-

Change the order of the registered camera number (4-screen display)

- 1 Click the [Camera] button.
- 2 Click the [NW camera] tab.
The "NW camera setup" page will be displayed.



- 3 Select the camera channel numbers to be interchanged from the pull-down menu.
The combination of the camera channels to be used for displaying images on a 4-screen are as follows.
Ch1 - Ch4, Ch5 - Ch8 ... Ch57 - Ch60, Ch61 - Ch64.
To change the combination of the camera channels, change the order of the camera channel number by interchanging the camera channel numbers.
The order of the camera channel number is also applied to the sequence display.

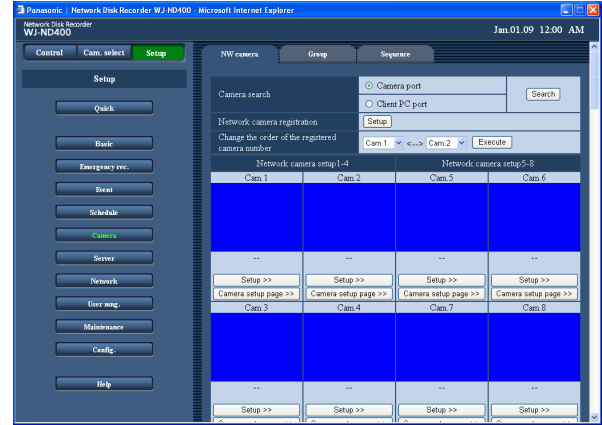
- 4 Click the [Execute] button.
The camera channel number will be interchanged.

Important:

- When the camera channel numbers are interchanged, it will be applied to the following settings.
 - Emergency recording (page 34)
 - Program (page 43)
 - Network information (page 82)

Check/change the settings of the camera manually

- 1 Click the [Camera] button.
- 2 Click the [NW camera] tab.
The "NW camera setup" page will be displayed.



Description about the button on the "NW camera setup" page

[Setup] button: The setting items of the cameras will be displayed in list form.

[Setup >>] button: The camera setup menu of the recorder will be displayed.

[Camera setup page >>] button: The setup menu of the camera will be called up and displayed. Refer to the operating instructions of the connected camera for information on how to configure the settings of the camera.

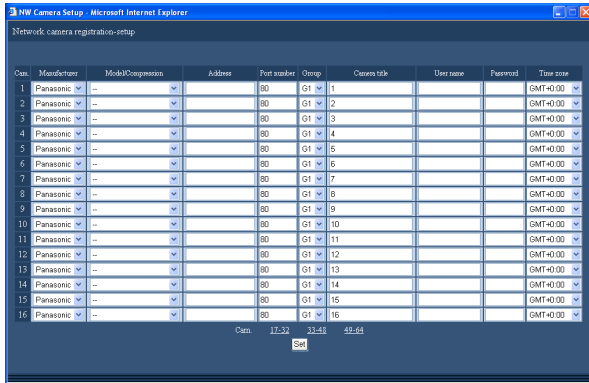
Important:

- To call up the setup menu of the camera, it is necessary to select "On" for "Port forwarding" on the "Port forwarding" page. (Page 63)
- Images may not be displayed when displaying the setup menu of the camera.
- The user name and password entries will be required to control the camera.

- 3 Click the [Setup] button or the [Setup >>] button of the camera of which the settings are to be checked or changed.

The "Network camera registration setup" window will be displayed. (The illustration shown below will be displayed when the [Setup] button is clicked.)

To display the setting page of the camera whose camera channel is not on the current page, click the desired camera channel range displayed above the [Set] button.



4 Check or change the settings of each setting item.

Refer to "Setup items" mentioned below.

5 Click the [Set] button.

Setup items

■ Manufacturer

Select the manufacturer of the camera.
Panasonic (default)/Axis

■ Model/Compression

Select the model of the camera and the image compression method.

Refer to the "readme.txt" on the provided CD-ROM about the model of the camera.

-- (default)

Model/JPEG

Model/M-JPEG

Model/MPEG-4

When the image compression method is changed, the live image transmission rate and the recording rate will be changed automatically. Set the live image transmission rate and the recording rate again after changing the image compression method. (Page 43)

- When changing the image compression method from "MPEG-4" to "JPEG" or "M-JPEG", the live image transmission rate and the recording rate will be set to "1ips".
- When changing from "JPEG" or "M-JPEG" to "MPEG-4", they will be set to "I-Frame".
- When changing the image compression method and the other settings together, they will be set to "Off".

■ Address

Enter the address of the camera.

■ Port number

Set the HTTP port number to be used for the camera. A number from 1 - 65535 is available.

Default: 80

■ Group

Select the group to which the camera is to be assigned (G1 - G8).

Default: G1

■ Camera title

Set the camera title to be displayed in the [Cam. Select] box, etc.

Enter up to 16 alphanumeric characters except the following:

! \$ % ' < = > @ [\] ^ _ ` { | } ~

■ User name

Set the user name for accessing the cameras and logging in.

Enter up to 32 alphanumeric characters.

■ Password

Set the password to be used to access and log in to the camera.

Enter up to 32 alphanumeric characters.

■ Time zone

The time zone of the camera will be displayed.

GMT-12:00 to GMT+13:00

Default: GMT-5:00 (NTSC), GMT+0:00 (PAL)

Note:

- When the registered camera is disconnected, the "CONNECT ERROR" indication will be displayed. In this case, select "--" for the "Model/ Compression" setting of the disconnected camera and delete the address on the "Network camera registration setup" window.
- When the connection with the camera is lost, the cause of the disconnection will be displayed in thumbnail. The following will be displayed when the connection with the camera is lost.

Display	Description
CONNECT ERROR	The communication with the camera disconnected.
ATTEST ERROR	The user authentication of the camera failed.
DNS ERROR	The server failed to resolve the address of the camera.
CAMERA ERROR	The response from the camera is incorrect.
PROXY(CONNECT) ERROR	Failed to connect to the proxy server.
PROXY(DNS) ERROR	Failed to resolve the address of the proxy server.
PROXY(CAMERA) ERROR	The response from the proxy server is incorrect.

Group

Set the title of the camera group.

1 Click the [Camera] button.

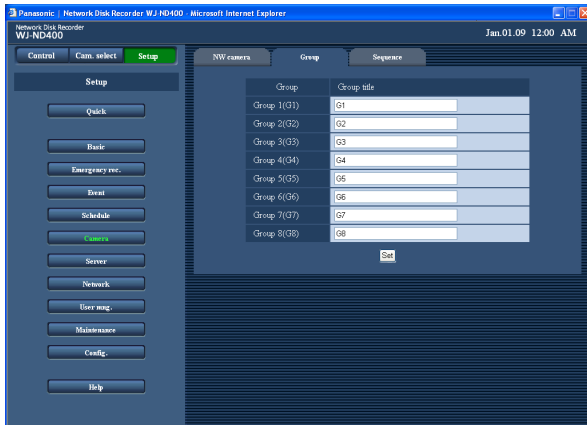
2 Click the [Group] tab.

The "Group" page will be displayed.

3 Enter the group titles.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Group title

Set the title of the camera group.

Enter up to 16 alphanumeric characters except the following:

! \$ % ' < = > @ [¥] ^ _ ` { | } ~

Default:

Group1 : G1

Group2 : G2

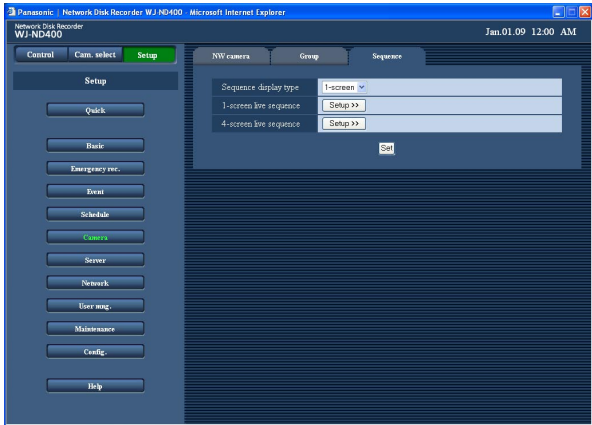
| | |

Group8 : G8

Sequence

The camera channels will be switched and images from the cameras will be displayed sequentially in order set in advance.

- 1 Click the [Camera] button.
- 2 Click the [Sequence] tab.
The "Sequence" page will be displayed.



- 3 Configure each setting item.
- Refer to "Setup items" mentioned next page.
- When the [Setup>>] button is clicked, the detailed settings window of the selected sequence display type will be displayed.



- 4 Click the [Set] button.

- Note:
- To change the order of the sequence display on a 4-screen, change the camera number. (Page 51)
 - When the image compression method of the camera assigned to the selected camera channel is "MPEG-4", the respective sequence step will be skipped.

Setup items

■ Sequence display type

Select "1-screen" (default) or "4-screen" for "Sequence display type".

■ 1-screen live sequence

[Cam.]

Select a camera channel from which images are to be displayed for each step from the following.

- - : The selected step will be skipped.

Cam.1 - Cam.64: Images from the selected camera channel will be displayed on a 1-screen.

[Preset position]

Enter a preset position (blank, 1 to 256).

When no position is entered (blank), the camera does not move to any preset position.

Default: blank

[Dwell time]

Select a dwell time of the selected sequence step from the following.

2s (default)/3s/5s/10s/20s

■ 4-screen live sequence

[Dwell time]

Select a dwell time of the selected sequence step from the following.

2s (default)/3s/5s/10s/20s

Server

NTP

Configure the settings to correct the time and date of the recorder by referring to the NTP server.

1 Click the [Server] button.

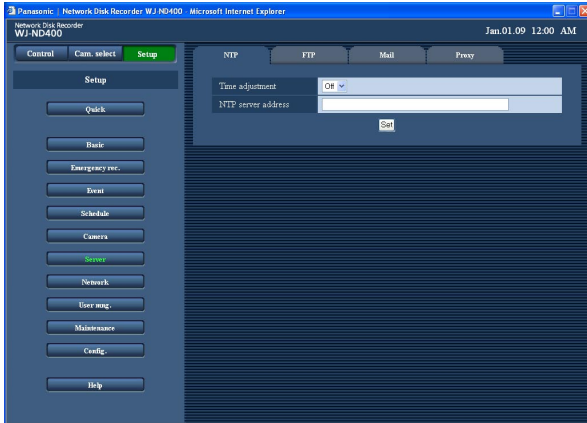
2 Click the [NTP] tab.

The "NTP" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Time adjustment

Select "On" or "Off" (default) to determine whether or not to adjust the time according to the NTP server.

■ NTP server address

Enter the NTP server address when using the NTP server to adjust the time.

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

Note:

- To enter a server name, it is necessary to select "Manual" or "Auto" for "DNS".

Important:

- When "On" is selected for the DHCP function of the recorder and the time and date difference between the recorder and the NTP server is more than $\pm 1\,000$ second, the "Time adjustment" function may sometimes not work.
- NTP server function
It is possible to run the recorder as an NTP server to be referred by the cameras. In this case, set the port number of the camera to "123".
Refer to the operating instructions of the connected camera for information on how to configure the settings of the camera.

FTP

Configure the settings to send images from the cameras connected to the recorder to the designated FTP server.

1 Click the [Server] button.

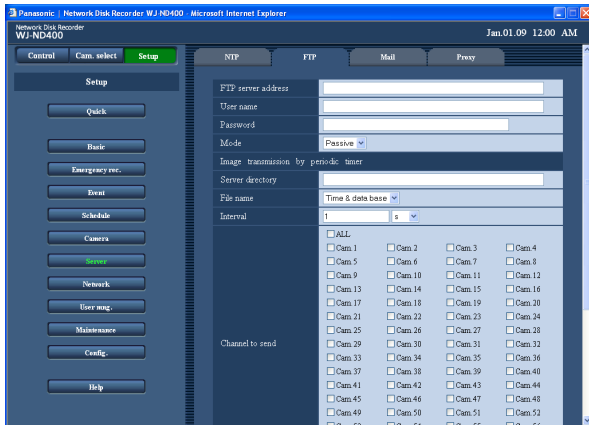
2 Click the [FTP] tab.

The "FTP" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ FTP server address

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

Note:

- To enter a server name, it is necessary to select "Manual" or "Auto" for "DNS".

■ User name

Enter a user name (login name) to access the FTP server.

Enter up to 32 alphanumeric characters except (&) and blank (space).

■ Password

Enter the password registered together with the user name.

Enter up to 32 alphanumeric characters except (&) and blank (space).

■ Mode

Select the FTP mode for sending images to the FTP server.

Change to "Passive" when sending images is difficult with "Active".

■ Image transmission by periodic timer

Configure the following settings to periodically transmit live images.

Configure the settings to determine whether or not to transmit live images to the FTP server using the timetable (page 47).

■ Server directory

Enter a destination directory of the server.

Enter up to 255 alphanumeric characters. The available characters are the characters listed below except (&*:;<>?\ | ~ blank (space)).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () + , - . / ; = @ [] ^ _ ` { }

■ File name

Determine how to give file name of an image to be sent. Select "Time & data base" or "Serial number".

■ Interval

Enter a number for transmission interval.

Enter a number (0.1 - 0.9 (in steps of 0.1), 1-1440) for transmission interval, and select "s" (seconds) or "m" (minutes) for the interval unit.

When selecting "s", 0.1 - 0.9 are available.

Default: 1s

■ Channel to send

Select a camera channel from which images will be sent periodically from the following.

Images from the checked camera channel will be sent to the FTP server.

Unselected, All, Cam.1 - Cam.64

Default: Unselected

Note:

- When the image compression method of the camera assigned to the selected camera channel is "MPEG-4", the images will not be sent.

■ Image transmission by alarm

Configure the following settings to send images recorded in the location where an alarm occurred. Determine whether or not to send images recorded in the location where an alarm occurred to the FTP server using the timetable (page 47).

■ Server directory

Enter a destination directory of the server.

Enter up to 255 alphanumeric characters. The available characters are the characters listed below except (&*:<>? \ | ~ blank (space)).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () + , - . / ; = @ [] ^ _ { }

■ Duration-Pre

Select the duration in which images have been recorded by the pre-event recording that are to be transmitted from the following.

Off/1s - 10s (in 1-second interval)

Default: Off

Note:

- When the image compression method of the camera assigned to the selected camera channel is "MPEG-4", images to be sent may not be in the specified recording duration.

■ Duration-Post

Select the duration in which images have been recorded by the post-event recording that are to be transmitted from the following.

Off/1s - 10s (in 1-second interval)

Default: 5s

Note:

- When the image compression method of the camera assigned to the selected camera channel is "MPEG-4", images to be sent may not be in the specified recording duration.

■ Alteration detection

Select "On" or "Off" (default) to determine whether or not to attach an alteration detection code.

Important:

- When "Off" is selected for the recording rate of the pre-event recording, images recorded by the pre-event recording will not be sent. Refer to page 43 for further information on how to configure the settings relating to the pre-event recording.

Note:

- It is possible to transmit images recorded by the emergency recording to the FTP server. Information about recorded images to be transmitted are as follows:

Camera channel: Camera channel from which images were recorded by an emergency recording

Images to be transmitted: Images recorded in the duration set for "Duration-Post" starting from a moment when the emergency recording started.

Destination directory: The directory designated for "Server directory" of "Image transmission by alarm" on the "FTP" page

Mail

Configure the settings relating to the alarm mail and the warning mail.

1 Click the [Server] button.

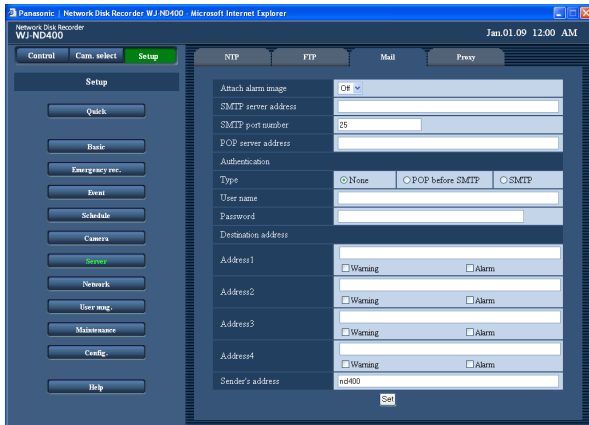
2 Click the [Mail] tab.

The "Mail" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Attach alarm image

Select "On" or "Off" (default) to determine whether or not to attach an image recorded at an event occurrence to an e-mail to be sent.

Note:

- When the image compression method of the camera in the location where an event occurred is "MPEG-4", the image will not be attached.
- Even when "On" is selected, the image will not be attached when "Off" is selected for the recording rate of the event recording.

■ SMTP server address

Enter an IP address or a name of the SMTP server to be used to send e-mails.

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

Note:

- To enter a server name, it is necessary to select "Manual" or "Auto" for "DNS".

■ SMTP port number

Enter a number from 1 - 65535 for the SMTP port number.

Default: 25

■ POP server address

Enter an IP address or a name of the POP server to be used to receive e-mails.

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

Note:

- To enter a server name, it is necessary to select "Manual" or "Auto" for "DNS".

Authentication

■ Type

Select the authentication type to send e-mails from the following.

None (default)/POP before SMTP/SMTP

■ User name

Enter the user name (login name) to be required for the authentication.

Enter up to 32 alphanumeric characters. The available characters are the characters listed below excluding (&) and blank (space).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

■ Password

Enter the password registered for the user name.

Enter up to 32 alphanumeric characters. The available characters are the characters listed below excluding (&) and blank (space).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

Destination address

■ Address1 - Address4

Enter the mail addresses of the recipients of the alarm mail and the warning mail. Up to 4 destination addresses can be registered. Check the checkboxes to determine the mail type to be sent.

Enter up to 255 alphanumeric characters including hyphens (-), periods (.), @ and (_).

■ Sender's address

Enter the mail address of a sender. Entered mail address will be displayed in the sender's line ("From" field) of the received mail.

Enter up to 127 alphanumeric characters including hyphens (-), periods (.), @ and (_).

Default: nd400

Proxy

Configure the settings to use the proxy server.

1 Click the [Server] button.

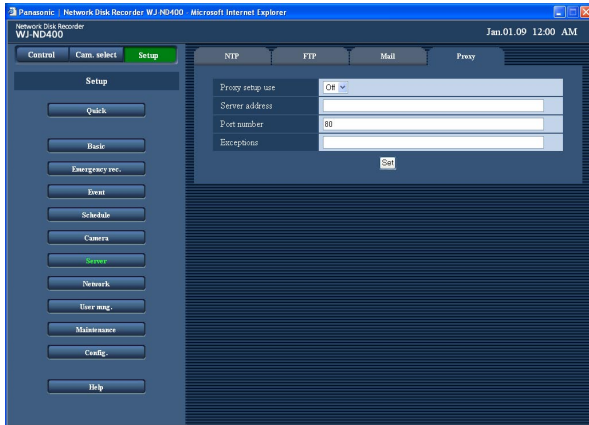
2 Click the [Proxy] tab.

The "Proxy" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Proxy setup use

Select "On" or "Off" (default) to determine whether or not to use the proxy server.

When "On" is selected, configure the settings for "Server address", "Port number" and "Exceptions".

■ Server address

Enter a proxy server address.

To enter a server name, it is necessary to select "Manual" or "Auto" for "DNS".

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

■ Port number

Enter the proxy server port number.

Default: 80

■ Exceptions

Specify the cameras that do not use the proxy server.

Enter the set address of the network camera.

Enter up to 128 alphanumeric characters including asterisks (*) and periods (.).

Note:

- Insert a semicolon (;) between the addresses to divide them when specifying multiple addresses. Entering "*" validates all numbers.

Network

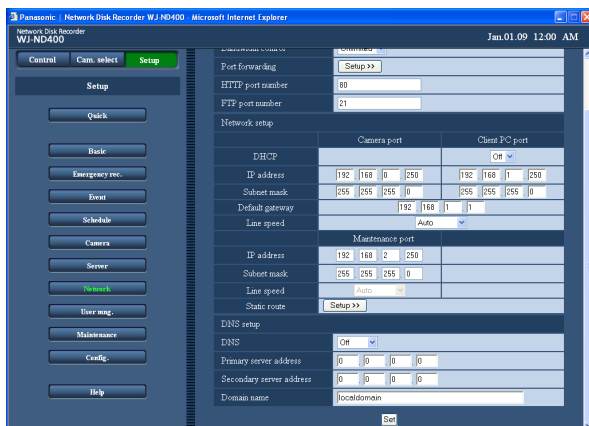
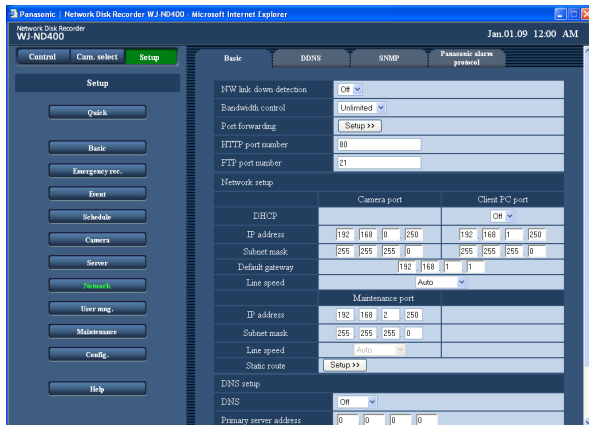
Basic

Configure the network settings of the recorder.

1 Click the [Network] button.

2 Click the [Basic] tab.

The "Basic" page of "Network" will be displayed.



3 Configure each setting item.

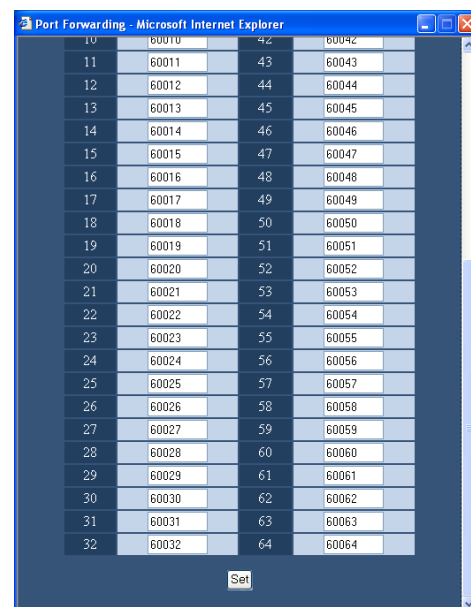
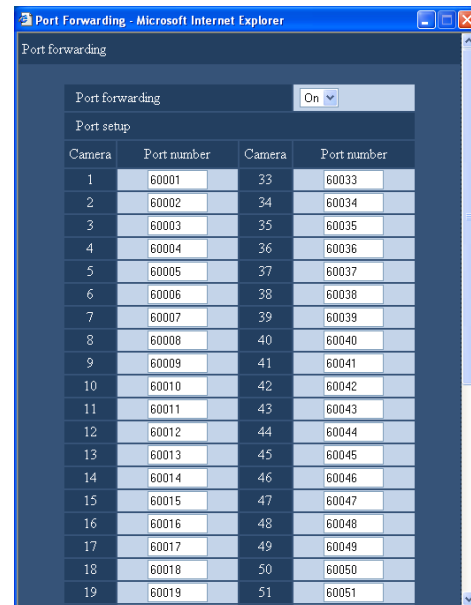
Refer to "Setup items" mentioned next page.

To configure the port forwarding setting, go to step 5.

To configure the static route, go to step 7 and follow the procedures.

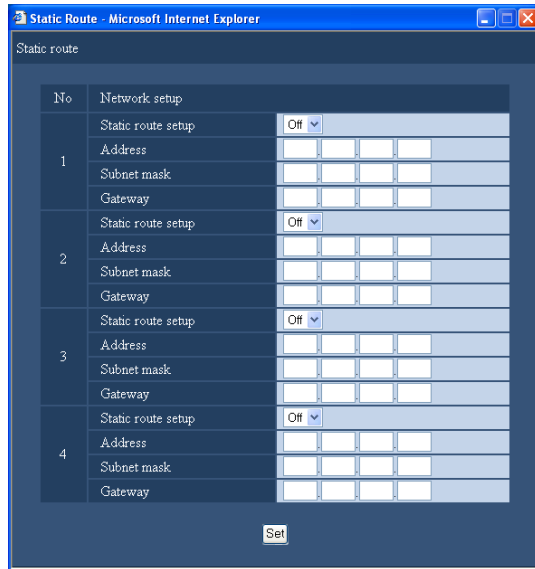
4 Click the [Set] button.

5 Click the [Setup>>] button of "Port forwarding".
The "Port forwarding" window will be displayed.



6 Set the port numbers and click the [Set] button.
The "Port forwarding" window will close.

- 7 Click the [Setup >>] button of "static route".**
The "Static route" window will be displayed.



- 8 Configure each setting item.**
Refer to the table "Static route" for further information about the setting items on the page 66.

- 9 Click the [Set] button.**

Setup items

■ NW link down detection

Select "On" or "Off" (default) to enable or disable the disconnection detection of the network line connected to the camera/client PC port at the rear of the recorder.

■ Bandwidth control

Set the maximum transmission rate from the following.
Unlimited (default)/32kbps/64kbps/128kbps/256kbps/
512kbps/ 1024kbps/2Mbps/5Mbps/10Mbps
The bandwidth will not be controlled when live images are transmitted in MPEG-4 format.

■ Port forwarding

Select "On" or "Off" to determine whether or not to set the port forwarding. When selecting "On", click the [Setup>>] button.

■ HTTP port number

Designate the HTTP port number to be used to transmit images from the recorder. A number from 1 - 65535 is available. Normally "80" is to be designated.

Note:

- Depending on the network settings of the LAN or Internet service provider, network communication cannot be established if the http port number has been changed. In this case, refer to the network administrator.
- The following port numbers and the port numbers used for the FTP port, for the site alarm setting, and for the port forwarding are unavailable for the HTTP port number.
- 20, 21, 23, 25, 42, 53, 67, 68, 69, 79, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007

■ FTP port number

Designate the FTP port number. A number from 1 - 65535 is available.

Normally "21" is to be designated.

The following port numbers and the port numbers used for the HTTP port, for the site alarm setting, and for the port forwarding are unavailable for the FTP port number.

20, 23, 25, 42, 53, 67, 68, 69, 79, 80, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007

Network setup - Camera port/Client PC port

■ DHCP

Select "On" or "Off" (default) to determine whether or not to use the DHCP server.

Select "On" to obtain an IP address, a subnet mask and a gateway address from the DHCP server. Set to "Off" when entering the addresses above manually.

■ IP address *1

When "Off" is selected for "DHCP", enter an IP address.

■ Subnet mask *1

Enter a subnet mask according to the network configuration when "Off" is selected for "DHCP".

■ Default gateway *1

Enter the gateway address according to the network environment when "Off" is selected for "DHCP".

■ Line speed

The following are available for the line speed.
Auto (default)/1000M-Full/100M-Full/100M-Half/
10M-Full/10M-Half

Network setup - Maintenance port

■ IP address *1

Enter an IP address.

■ Subnet mask *1

Enter a subnet mask.

■ Static route

Determine whether or not to validate the static route setting. To configure this setting, click the [Setup >>] button.

DNS setup

■ DNS

Select "Manual" or "Auto" to enable to search the IP address from the host name using the DNS. Select "Off" when not using the DNS.
"Auto" is available only when "On" is selected for "DHCP" (using the DHCP server). (Page 63)
"Manual" is available regardless of the "DHCP" setting (using the DHCP server or not).

When "Manual" is selected for "DNS", enter the DNS server addresses to "Primary server address" and "Secondary server address".

Default: Off

■ Primary server address

Enter the IP address of the primary DNS server.

■ Secondary server address

Enter the IP address of the secondary DNS server.

■ Domain name

Enter the domain name of the recorder. (Default: local-domain)

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

The first character of the domain name should be an alphabetical character.

*1 Refer to page 11 about the default setting.

Important:

- The network settings for each port (IP address, etc.) should be configured with a different subnet.
 - When "On" is selected for "DHCP" and any frame rate other than "Off" is select for "SD memory rec.", a request for writing data onto the SD memory card demanded at the startup of the recorder may fail. This error may occur when the response from the DHCP server is slow. However, a request for writing data onto the SD memory card will be accepted once the addresses have been obtained from the DHCP server.
-

Port forwarding

■ Port forwarding

Select "On" (default) or "Off" to determine whether or not to set the port forwarding.

■ Port number

When selecting "On" for "Port forwarding", set numbers from 1 - 65525 to the port numbers of each camera. (Camera1: 60001 (default) - Camera64: 60064)
The following port numbers and the port numbers used for the HTTP port, for the FTP port, for the site alarm setting, and for the port forwarding are unavailable.
20, 21, 23, 25, 42, 53, 67, 68, 69, 79, 80, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007

Static route

■ Static route setting

Select "On" or "Off" (default) to determine whether or not to validate the static route setting.

Configure this setting after considering the network connection environment of this product.

■ Address

Enter the destination address.

The following values are unavailable.

Broadcast address, loop-back address, class D address, class E address, "0.0.0.0", "255.255.255.255", and any of the address used for the camera port/client PC port/maintenance port.

■ Subnet mask

Enter the subnet mask of the destination.

The following values are unavailable.

Broadcast address, loop-back address, class D address, class E address, "0.0.0.0", "255.255.255.255", and any of the address used for the camera port/client PC port/maintenance port.

■ Gateway

Enter the gateway of the destination.

The following values are unavailable.

Broadcast address, loop-back address, class D address, class E address, "0.0.0.0", "255.255.255.255", any of the address used for the camera port/client PC port/maintenance port, and any of other addresses which are included in another subnet from the subnet of camera port/client PC port/maintenance port.

DDNS

Configure the settings to use the DDNS (Dynamic Domain Name System).

1 Click the [Network] button.

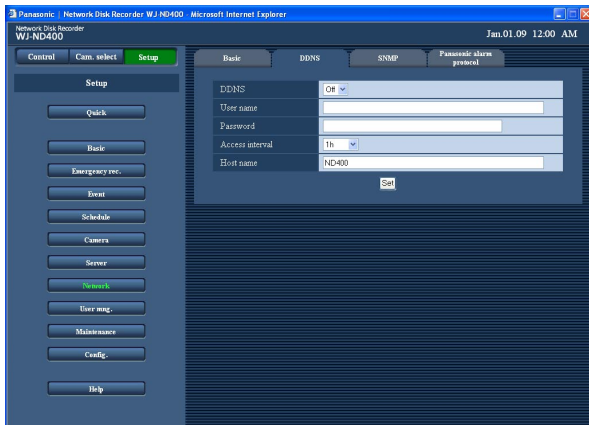
2 Click the [DDNS] tab.

The "DDNS" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ DDNS

Select "On" or "Off" (default) to determine whether or not to use the DDNS.

■ User name

Enter a user name registered in the DDNS.

Enter up to 32 alphanumeric characters. The available characters are the follows.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

■ Password

Enter a password respective to the entered user name.

Enter up to 32 alphanumeric characters. The available characters are the follows.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () + , - . / : ; < = > ? @ [\] ^ _ { | } ~

■ Access interval

Select an interval to update the DDNS from the following:
10min/30min/1h (Default)/6h/24h

■ Host name

Enter a host name registered in the DDNS.

Enter up to 255 alphanumeric characters including hyphens (-) and periods (.).

Default: ND400

SNMP

Configure the settings to use the SNMP (Simple Network Management Protocol). Configure the settings to check the status of the recorder, etc. by connecting the SNMP manager.

1 Click the [Network] button.

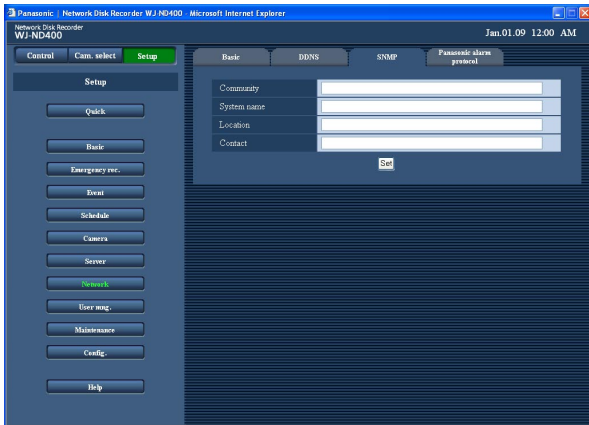
2 Click the [SNMP] tab.

The "SNMP" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Community

Enter a name used for SNMP community in alphanumeric characters.

Enter up to 32 alphanumeric characters. The available characters are the characters listed below.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z 0 1 2 3 4
5 6 7 8 9 ! # \$ % ' () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

■ System name

Enter a system name in alphanumeric characters to manage the recorder by the SNMP system, for example, No1.

Enter up to 255 alphanumeric characters.

■ Location

Enter a location name (location where the recorder is installed) in alphanumeric characters, for example, 2F.

Enter up to 255 alphanumeric characters.

■ Contact

Enter the contact information (mail address, etc.) of the administrator of the recorder.

Enter up to 255 alphanumeric characters.

Panasonic alarm protocol

Configure the setting to notify of an event occurrence (or error information) to PCs (addresses) registered in advance.

Up to 4 destination addresses can be registered.

To receive a notification of an event occurrence (or error information) and display the contents of the notification, the dedicated software* is necessary.

* Refer to the "readme.txt" on the provided CD-ROM about the dedicated software.

1 Click the [Network] button.

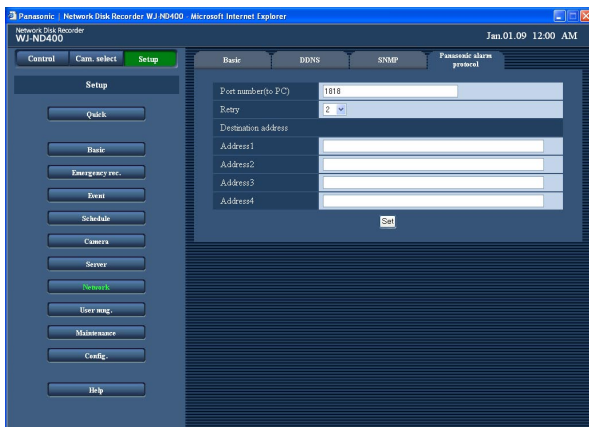
2 Click the [Panasonic alarm protocol] tab.

The "Panasonic alarm protocol" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Port number(to PC)

Enter the port number to be used for the Panasonic alarm protocol.

Default: 1818

■ Retry

Set the number of retry attempts for the transmission to the PC.

1 - 30 (**Default:** 2)

Destination address

■ Address1 - Address4

Enter the addresses of the destined PCs. Enter the IP address or host name for "Address1" - "Address4". Enter up to 255 alphanumeric characters including hyphens (-), periods (.) and underscore (_).

Note:

- To enter a host name, it is necessary to select "Manual" or "Auto" for "DNS".

User management

Configure the settings for the user authentication/host authentication required to access the recorder from PCs. It is possible to restrict access the recorder from users/hosts (PCs) by registering users and hosts (PCs).

Basic

Determine whether to enable or disable the user authentication and the host authentication.

1 Click the [User mng.] button.

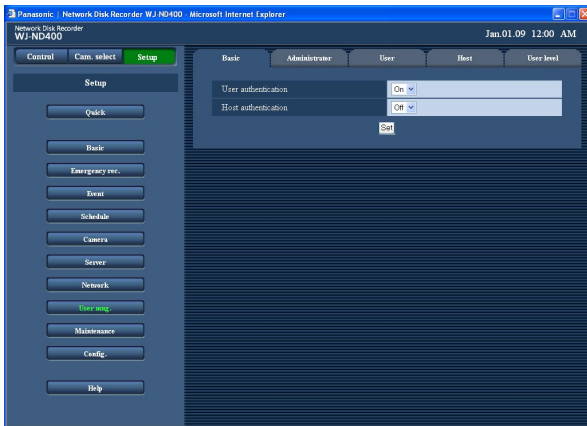
3 Configure each setting item.

Refer to "Setup items" mentioned below.

2 Click the [Basic] tab.

The "Basic" page of "User mng." will be displayed.

4 Click the [Set] button.



Setup items

■ User authentication

Select "On" (default) or "Off" to determine whether to enable or disable the user authentication.

■ Host authentication

Select "On" or "Off" (default) to determine whether to enable or disable the host authentication.

It is impossible to select "On" when no host is registered. Configure the settings on the "Host" page in advance. (Page 74)

Administrator

Configure the settings of the administrator of the recorder.

1 Click the [User mng.] button.

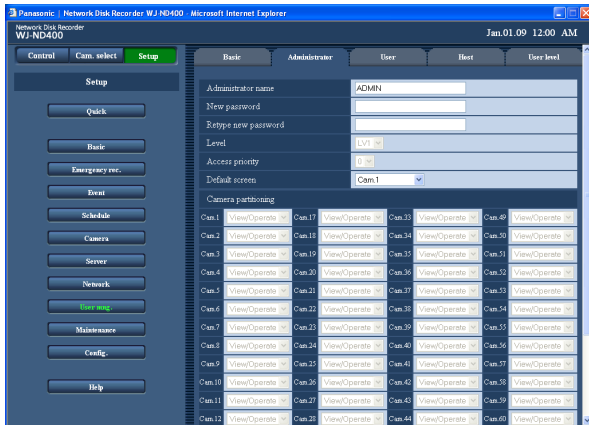
2 Click the [Administrator] tab.

The "Administrator" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Important:

- The administrator settings can be configured only when logging in as the administrator.
- When logging in to the recorder without changing the default administrator password, the message saying that it is recommended to change the password will be displayed.

Setup items

■ Administrator name

It is possible to edit the name of the administrator.

Default: ADMIN

Enter 5 to 14 alphanumeric characters for the administrator name.

■ New password

Retype new password

Enter a password.

Enter 5 to 8 alphanumeric characters.

Set a unique password, not to be easily guessed by an outsider. Please do not forget the set password.

To enhance the security, change the password periodically.

■ Level

The operational level of the administrator will be displayed. The operational level of the administrator is "LV1" and it is impossible to change it.

Operable functions for "LV1" can be set in the "User level" page (page 76).

■ Access priority

The rank of the priority to operate the recorder in case multiple users access the recorder simultaneously will be displayed. The priority rank of the administrator is "0 (highest)" and it is impossible to change it.

■ Default screen

Select the camera channel from which images are to be displayed just after login from the following.

Cam.1 (default) - Cam.64/Cam.1 - 4/Cam.5 - 8 ...

Cam.61 - 64/Seq

Cam.1 - Cam.64: Live images from the selected camera channel will be displayed on a 1-screen.

Cam.1 - 4 ... Cam.61 - 64: Live images from the selected camera channels will be displayed on a 4-screen.

Seq: Images will be displayed sequentially.

■ Camera partitioning

Operational functions of each camera channel will be displayed. The camera partitioning setting of the administrator is "View/Operate" and it is impossible to change it.

User

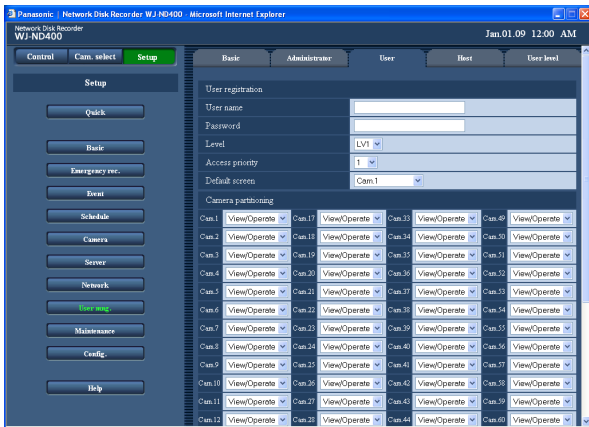
Configure the user settings (change of user name and password, operational level, etc.).

Up to 32 users can be registered.

1 Click the [User mng.] button.

2 Click the [User] tab.

The "User" page will be displayed.



3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Registration] button.

5 Repeat steps 3 - 4 to register other users.

6 When completing the user registration, click the [Set] button.

Setup items

■ User name

Enter a user name.

Enter 5 to 14 alphanumeric characters.

■ Password

Enter a password.

Enter 5 to 8 alphanumeric characters.

Set a unique password, not to be easily guessed by an outsider. Please do not forget the set password.

To enhance the security, change the password periodically.

■ Level

Select the user level from the following.

Operable functions for each level can be set in the "Level" menu (page 76).

LV1 (Default)/LV2/LV3/LV4

■ Access priority

Select the rank of the priority (1 - 16: highest - lowest) for the selected user to operate the recorder in case multiple users access the recorder simultaneously will be displayed.

Default: 1

■ Default screen

Select the camera channel from which images are to be displayed just after login from the following.

Cam.1 (default) - Cam.64/Cam.1 - 4/Cam.5 - 8 ...

Cam.61 - 64/Seq

Cam.1 - Cam.64: Live images from the selected camera channel will be displayed on a 1-screen.

Cam.1-4 - Cam.61-64: Live images from the selected camera channels will be displayed on a 4-screen.

Seq: Images will be displayed sequentially.

■ Camera partitioning

Determine the operational functions of each camera channel.

View/Operate (default): Both displaying of live/recorded images and controlling of the cameras are possible.

Display: Displaying of live/recorded images is possible, but controlling of the cameras is impossible.

--: Neither displaying of live/recorded images nor controlling of the cameras are possible.

Important:

- When the user settings are registered, edited or deleted, do not forget to click the [Set] button to apply the settings.

Note:

- Even when the [Registration] button is clicked, other login users will not be logged out.
-

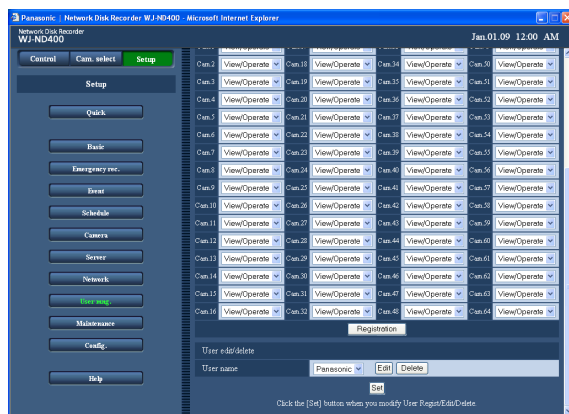
Edit the user settings

1 Edit the user settings

2 Click the [User] tab.

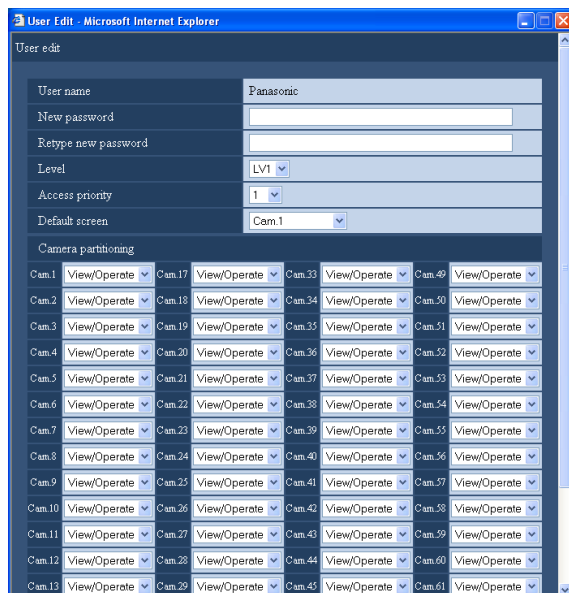
The "User" page will be displayed.

3 Select the user name whose settings are to be edited in the "User edit/delete" box.



4 Click the [Edit] button.

The "User edit" window will be displayed.



5 Configure each setting item.

6 Click the [Registration] button.

7 Click the [Set] button.

The "User edit" window will close.

Delete the user settings

1 Click the [User mng.] button.

2 Click the [User] tab.

The "User" page will be displayed.

3 Select the user name whose settings are to be deleted in the "User edit/delete" box.

4 Click the [Delete] button.

5 Click the [Set] button.

Important:

- When the [Set] button is clicked, the settings will be applied and all login users including a user who clicked the [Set] button will be forcibly logged out.
-

Host

Configure the settings to register PCs (hosts) that can access to the recorder via a network such as a LAN.
Up to 32 hosts can be registered.

1 Click the [User mng.] button.

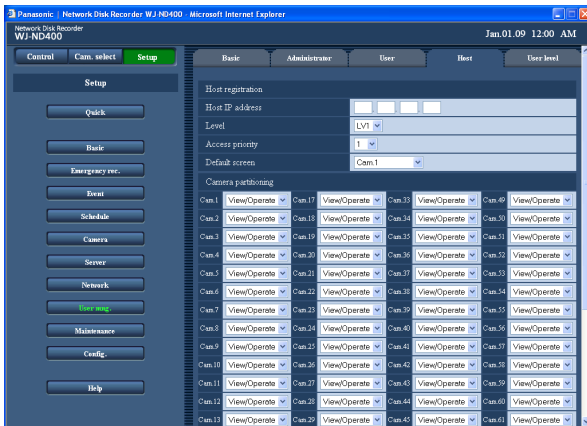
2 Click the [Host] tab.

The "Host" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ Host IP address

Enter an IP address.

Enter 4 units from the decimal numbers (0-255).

Note:

- Entering "*" validates all numbers. It is impossible to register "0.0.0.0" and "*.*.*.*".

■ Level

Select a user level from the following.

Operable functions for each level can be set in the "Level" menu (page 76).

LV1(default)/LV2/LV3/LV4

■ Access priority

The rank of the priority to operate the recorder in case multiple users access the recorder simultaneously will be displayed.

Default: 1

■ Default screen

Select the camera channel from which images are to be displayed just after login from the following.

Cam.1(default) - Cam.64/Cam.1 - 4/Cam.5 - 8 ...

Cam.61 - 64/Seq

Cam.1 - Cam.64: Live images from the selected camera channel will be displayed on a 1-screen.

Cam.1-4 - Cam.61-64: Live images from the selected camera channels will be displayed on a 4-screen.

Seq: Images will be displayed sequentially.

■ Camera partitioning

Determine the operational functions of each camera channel.

View/Operate (default): Both displaying of live/recorded images and controlling of the cameras are possible.

Display: Displaying of live/recorded images is possible, but controlling of the cameras is impossible.

--: Neither displaying of live/recorded images nor controlling of the cameras are possible.

Important:

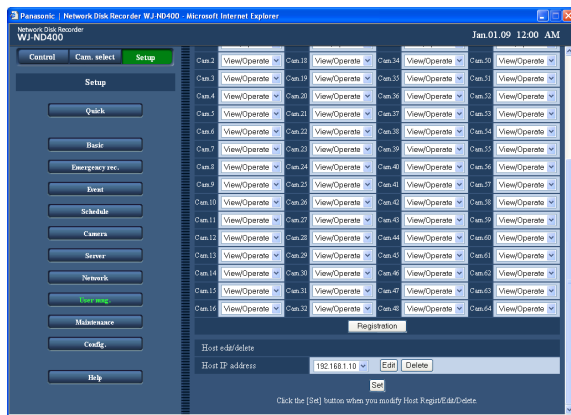
- When the host settings are registered, edited or deleted, do not forget to click the [Set] button to apply the settings.

Note:

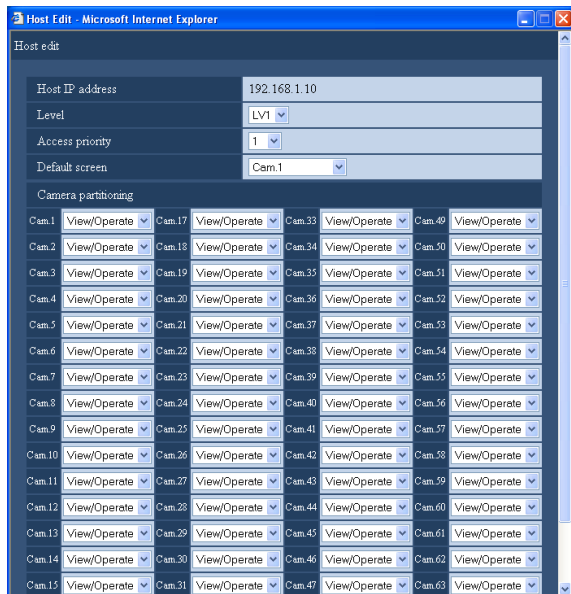
- Even when the [Registration] button is clicked, other login users will not be logged out.

Edit the host settings

- 1 Click the [User mng.] button.
- 2 Click the [Host] tab.
The "Host" page will be displayed.
- 3 Select the host name whose settings are to be edited in the "Host edit/delete" box.



- 4 Click the [Edit] button.
The "Host edit" window will be displayed.



- 5 Configure each setting item.

- 6 Click the [Registration] button.

- 7 Click the [Set] button.

Delete the host settings

- 1 Click the [User mng.] button.
- 2 Click the [Host] tab.
The "Host" page will be displayed.
- 3 Select the host name whose settings are to be deleted in the "Host edit/delete" box.
- 4 Click the [Delete] button.
- 5 Click the [Set] button.

Important:

- When the [Set] button is clicked, the settings will be applied and all login users including a user who clicked the [Set] button will be forcibly logged out.

User level

Assign a level (LV1/LV2/LV3/LV4) to every user to restrict operable functions.

1 Click the [User mng.] button.

2 Click the [User level] tab.

The "User level" page will be displayed.

3 Configure each setting item.

4 Click the [Set] button.

Note:

- Each parameter of user level in the default setting is as follows:

LV1: Possible to perform all the operations
(Administrator)

LV2: Possible to display the settings of the recorder and the access log, and to reset the alarm

LV3: Possible to monitor live images or play recorded images

LV4: Possible to monitor live images



Functions that can be restricted

The following functions can be restricted according to the user levels.

Function	Settings	Description
Setup	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to display the setup menu and edit the settings on the setup menu on the following pages: "Basic", "Emergency rec.", "Event", "Schedule", "Config."
Quick	Checked ^{*1/} Unchecked ^{*2*3*4}	It is possible to edit the settings on the "Quick" page.
Camera	Checked ^{*1/} Unchecked ^{*2*3*4}	It is possible to edit the settings on the "Camera" page.
Server	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to edit the settings on the "Server" page.
Network	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to edit the settings on the "Network" page.
User mng.	Checked ^{*1/} Unchecked ^{*2*3*4}	It is possible to edit the settings on the "User mng." page.
Maintenance	Checked ^{*1/} Unchecked ^{*2*3*4}	It is possible to edit the settings on the "Maintenance" page.
Camera control	Checked ^{*1*2*3/} Unchecked ^{*4}	It is possible to pan/tilt the camera.

Function	Settings	Description
Error log status	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to display error logs. (Refer to the operating instructions (PDF).)
Access log status	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to display access logs. (Refer to the operating instructions (PDF).)
Event log status	Checked ^{*1*2*3/} Unchecked ^{*4}	It is possible to display event logs. (Refer to the operating instructions (PDF).)
Network log status	Checked ^{*1*2/} Unchecked ^{*3*4}	It is possible to display network logs. (Refer to the operating instructions (PDF).)
Alarm reset	Checked ^{*1*2/} Unchecked ^{*3*4}	An alarm action can be canceled. (Refer to the operating instructions (PDF).)
Error reset	Checked ^{*1*2/} Unchecked ^{*3*4}	An event action can be canceled. (Refer to the operating instructions (PDF).)
Alarm suspend	Checked ^{*1*2/} Unchecked ^{*3*4}	An alarm action can be suspended. (Refer to the operating instructions (PDF).)
Copy	Checked ^{*1/} Unchecked ^{*2*3*4}	A recorded image can be manually copied. (Refer to the operating instructions (PDF).)
Manual rec. operation	Checked ^{*1*2/} Unchecked ^{*3*4}	Manual recording can be started and stopped.
Playback operation	Checked ^{*1*2*3/} Unchecked ^{*4}	Recorded images can be played.

*1 LV1 initial default setting

*2 LV2 initial default setting

*3 LV3 initial default setting

*4 LV4 initial default setting

Note:

- When checking the checkboxes of "Quick", "Camera", "Server", "Network", "User mng." and "Maintenance", the checkbox of "Setup" will be checked automatically.
- On the contrary, even when the checkbox of "Setup" is checked, "Quick", "Camera", "Server", "Network", "User mng." and "Maintenance" will not be checked.

Maintenance

It is possible to check the status of the recorder and the network, and configure the settings relating to the hard disk drives.

Product information

Versions of the software and the hardware, MAC address, serial number, temperature inside the recorder and software version of the connected extension unit will be displayed.

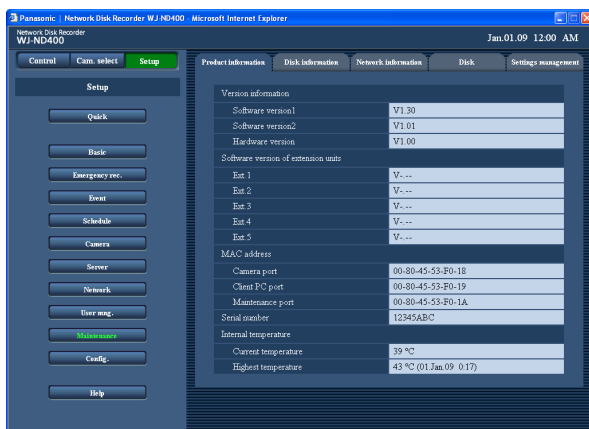
1 Click the [Maintenance] button.

2 Click the [Product information] tab.

The "Product information" page will be displayed.

3 Check each item.

Refer to the table "Product information" for information about the items.



Product information

Item	Description
Version information	
Software version 1	Version of software 1 will be displayed.
Software version 2	Version of software 2 will be displayed.
Hardware version	Version of the hardware will be displayed.
Software versions of extension units	
Ext1 - 5	Software versions of extension units 1 - 5 will be displayed.
MAC address	
Camera port	The MAC address of the camera port will be displayed.
Client PC port	The MAC address of the client PC port will be displayed.
Maintenance port	The MAC address of the maintenance port will be displayed.
Serial number	The serial number of the recorder will be displayed.
Internal temperature	
Current temperature	The current temperature inside the recorder will be displayed.
Highest temperature	The highest temperature inside the recorder that was recorded by now since the power of the recorder was turned on for the first time will be displayed.

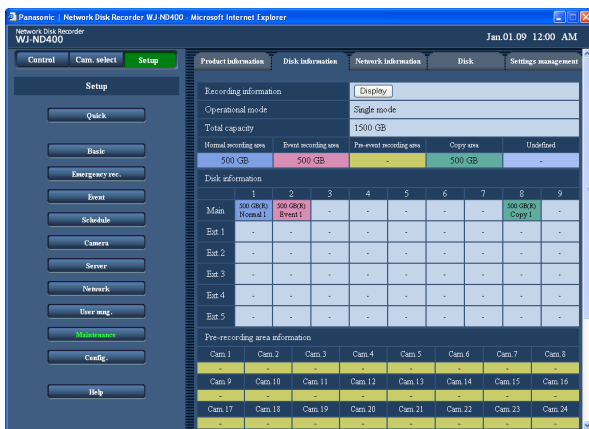
Disk information

The original capacity, the available capacities of the hard disk drives on the recorder or the extension unit (EXT1-5), and capacities of each recording area will be displayed. It is also possible to check the time range of the images recorded on the hard disk drives, and the life time of the hard disk drives (hour meter).

1 Click the [Maintenance] button.

2 Click the [Disk information] tab.

The "Disk information" page will be displayed.



3 Check each item.

Refer to the table "Disk information" for information about the items.

4 Click the [Display] button of "Recording information".

The "Recording information" window will be displayed and the disk capacity and the available capacity of each hard disk drive and the time range of the images recorded on each hard disk drive will be displayed.

Disk	Capacity	Free capacity	Hour meter	Recorded time range
1	500 GB (R)	498 GB	3 h	-
2	500 GB (R)	498 GB	3 h	-
3	- GB	- GB	- h	-
4	- GB	- GB	- h	-
5	- GB	- GB	- h	-
6	- GB	- GB	- h	-
7	- GB	- GB	- h	-
8	500 GB (R)	498 GB	3 h	-
9	- GB	- GB	- h	-
10	- GB	- GB	- h	-
11	- GB	- GB	- h	-
12	- GB	- GB	- h	-
13	- GB	- GB	- h	-
14	- GB	- GB	- h	-
15	- GB	- GB	- h	-
16	- GB	- GB	- h	-
17	- GB	- GB	- h	-
18	- GB	- GB	- h	-
19	- GB	- GB	- h	-
20	- GB	- GB	- h	-
21	- GB	- GB	- h	-
22	- GB	- GB	- h	-
23	- GB	- GB	- h	-
24	- GB	- GB	- h	-

5 Check each item.

Refer to the table "Recording information" for information about the items.

Disk information

Item	Description
Recording information	<p>When the [Display] button is clicked, the "Recording information" window will be displayed and the disk capacity and the available capacity of each hard disk drive and the time range of the images recorded on each hard disk drive will be displayed.</p> <p>When operating in the RAID 5/RAID 6 mode, refer to "HDD1" for the disk information.</p>
Operational mode	<p>The operational mode of the recorder will be displayed.</p> <p>Single mode/RAID5 mode/RAID6 mode</p>
Total capacity	The total capacity of all the hard disk drives will be displayed.
Normal recording area	Capacity of the normal recording area (recording area for manual recording and schedule recording) will be displayed.
Event recording area	Capacity of the event recording area (recording area for emergency recording and post-event recording) will be displayed.
Pre-event recording area	Capacity of the pre-event recording area (recording area for pre-event recording) will be displayed.
Copy area	Available capacity of the copy area will be displayed.
Undefined	Capacity of area to which no recording area is assigned will be displayed.
Disk information	<p>Capacity and the formatted area of each hard disk drive on the recorder and the extension unit will be displayed.</p> <ul style="list-style-type: none"> • When operating in the RAID 5/RAID 6 mode, refer to "HDD1" for the capacity. • The following information will be displayed for the formatted area. <p>Normal*: Hard disk drive that is formatted as the normal recording area.</p> <p>Event*: Hard disk drive that is formatted as the event recording area.</p> <p>Pre-event: Hard disk drive that is formatted as the pre-event recording area.</p> <p>Copy*: Hard disk drive that is formatted as the copy area.</p> <p>Remove: Hard disk drive is removed from the operation due to an error occurrence.</p> <p>Error: Hard disk drive in which an error occurred in the process of the format.</p> <p>N-Used: Hard disk drive that is formatted as the normal recording area using the other ND400. (Only playback is available. Recording is unavailable.)</p> <p>E-Used: Hard disk drive that is formatted as the event recording area using the other ND400. (Only playback is available. Recording is unavailable.)</p> <p>P-Used: Hard disk drive that is formatted as the pre-event recording area using the other ND400. (Only playback is available. Recording is unavailable.)</p> <p>C-Used: Hard disk drive that is formatted as the copy area using the other ND400. (Only playback is available. Copying is unavailable.)</p> <p>* Indicates the recording order.</p> <p>The (R) mark of the hard disk drive capacity indicates the hard disk drive to be used for recording.</p>
Pre-recording area information	Capacity of pre-event recording area for each camera channel will be displayed.

Recording information

Item	Description
Capacity	Capacity of the hard disk drive will be displayed.
Remain capacity	Remaining capacity of the hard disk drive will be displayed. <ul style="list-style-type: none">• The displayed remaining capacity will not include the space required for data management. Therefore, the understated remaining capacity will be displayed.• Available capacity of the pre-event recording area will not be displayed.
Hour meter	Operating time of the hard disk drive will be displayed.
Recorded time range	Time range of recorded images will be displayed. Time range of recorded images on the pre-event recording area will not be displayed.

Network information

Network information such as IP addresses of the connected devices, network line speed and number of login users will be displayed.

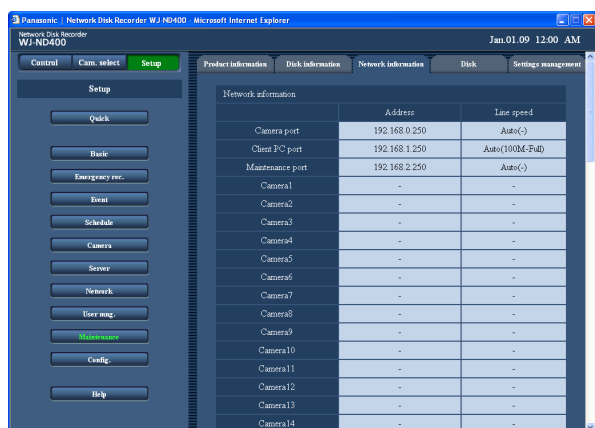
1 Click the [Maintenance] button.

2 Click the [Network information] tab.

The "Network information" page will be displayed.

3 Check each item.

Refer to the table "Network information" for information about the items.



Network information

Item	Description
Network information	
Address	Information of each port of the recorder and IP addresses of the connected device will be displayed. When the camera is connected via a proxy server, the IP address of the proxy server will be displayed as the IP address of the camera.
Line speed	The line speed setting will be displayed.
Login user	
User	Number of login users will be displayed.
Number of FTP users	Number of login users accessing via an FTP will be displayed.

Disk

Configure the settings to determine the action to be taken when the available capacity of the hard disk drives on the recorder is running out.

1 Click the [Maintenance] button.

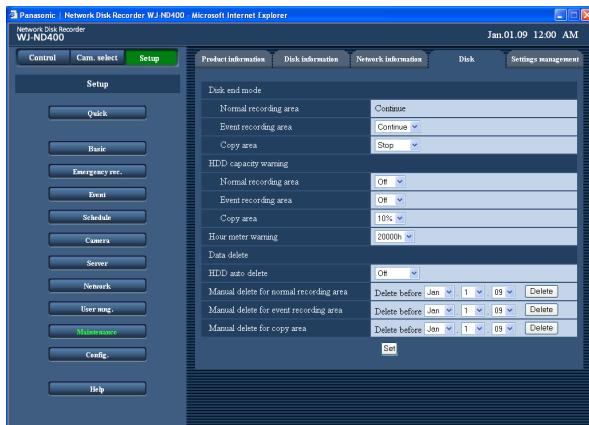
2 Click the [Disk] tab.

The "Disk" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

Disk end mode

■ Normal recording area

The oldest data will be overwritten and saved as new data when capacity of the normal recording area has run out.

■ Event recording area

Determine the action to be taken when the capacity of the event recording area runs out.

Continue (default): The oldest data will be overwritten and saved as new data when capacity of the event recording area has run out.

Stop: Recording will stop when the capacity has run out.

■ Copy area

Determine the action to be taken when the capacity of the copy area runs out.

Continue: The oldest data will be overwritten and saved as new data when capacity of the copy area has run out.

Stop (default): Copying will stop when the capacity has run out.

HDD capacity warning

■ Normal recording area

Select a level of the remaining capacity to issue a warning when the remaining capacity of the normal recording area reaches a specified level.

Off (default)/1% - 10%

■ Event recording area

Select a level of the remaining capacity to issue a warning when the remaining capacity of the event recording area reaches a specified level.

Off (default)/1% - 10%

■ Copy area

Select a level of the remaining capacity to issue a warning when the remaining capacity of the copy area reaches a specified level.

Off/1% - 10% (default)

Hour meter warning

Select an operating time to issue a warning when the operating time (hour meter) of the hard disk drive reaches a specified operating time.

10000h/20000h (default)/30000h

Delete recorded images on the hard disk drive

There are 2 ways to delete images; auto deletion and manual deletion.

1 Click the [Maintenance] button.

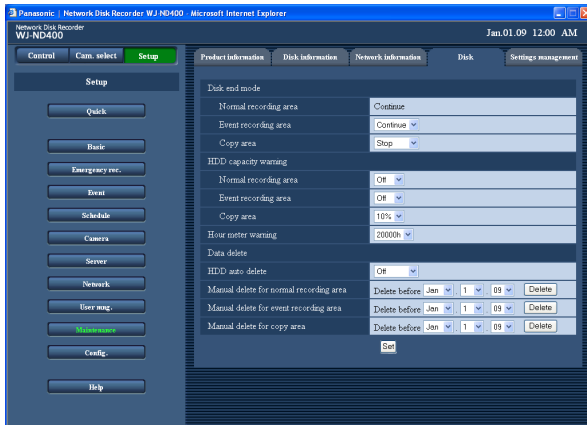
2 Click the [Disk] tab.

The "Disk" page will be displayed.

3 Configure each setting item.

Refer to "Setup items" mentioned below.

4 Click the [Set] button.



Setup items

■ HDD auto delete

Configure the settings to delete images automatically when the set days have passed from the day the images were recorded. The following days can be set. When "Off" is selected, auto deletion will not be performed. Off (default)/1day/2days/3days/4days/5days/6days/7days/8days/9days/10days/14days/30days/1month/45days/60days/90days/120days/150days/180days
Deletion by the "HDD auto delete" function will start at 0:05:00.

■ Manual delete for normal recording area

By setting the time and date, images in the normal recording area of the hard disk drive that were recorded up until a day before the set time and date will be deleted. Click the [Delete] button after setting the time and date.

08 - 34 (year)/1 -12 (month)/1 - 31 (day)

■ Manual delete for event recording area

By setting the time and date, images in the event recording area of the hard disk that were recorded up until a day before the set time and date will be deleted. Click the [Delete] button after setting the time and date.

08 - 34 (year)/1 -12 (month)/1 - 31 (day)

■ Manual delete for copy area

By setting the time and date, images in the copy area of the hard disk that were recorded up until a day before the set time and date will be deleted. Click the [Delete] button after setting the time and date.

08 - 34 (year)/1 -12 (month)/1 - 31 (day)

Note:

- Recorded images and audio data on both the copy area and the pre-event recording area cannot be deleted using the "HDD auto delete" function.

Settings management

It is possible to save the settings of the setup menu in the recorder, and to call up saved settings (load). It is also possible to reset the settings of the setup menu to the default.

1 Click the [Maintenance] button.

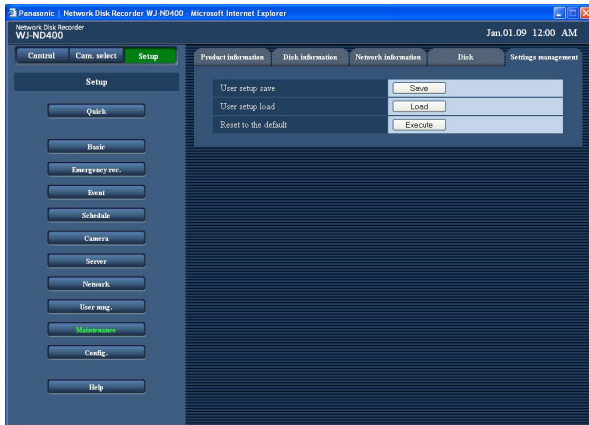
2 Click the [Settings management] tab.

The "Settings management" page will be displayed.

3 Click the desired button according to your purpose.

The selected action will be taken.

Refer to the table "Settings management" for information about the setting items.



Settings management

Item	Description
User setup save	The settings will be saved in the recorder.
User setup load	The saved settings will be loaded onto the recorder.
Reset to the default	The settings will be reset to the default.

Important:

- The following settings will not be reset or loaded even when the [Execute] button of "Reset to the default" or the [Load] button is clicked.
 - NW link down detection
 - Bandwidth control
 - HTTP port number
 - FTP port number
 - Network setup
 - DNS setup
- When the settings are loaded by clicking the [Load] button the "Host authentication" setting will be set to "Off".

Disk config.

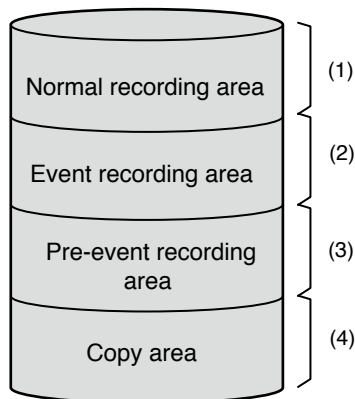
Configure the settings relating to the hard disk drive on the disk configuration page.

It is possible to format the hard disk drive, and check the total capacity and the capacities of each recording area on the disk configuration page.

HDD management

The hard disk drives in the recorder are managed by virtually dividing into 4 recording areas.

Only one of the 4 recording areas can be assigned to a single hard disk drive.



The available disk capacity of each recording area can be checked on the setup menu.

(1) Normal recording area

The following will be stored in this area. Images recorded by the event recording will not be stored in this area.

- Image/audio data recorded by manual recording
- Image/audio data recorded by the schedule recording
- SD memory data

(2) Event recording area

The following will be stored in this area.

- Image/audio data recorded by the event recording
- Image/audio data recorded by the emergency recording

(3) Pre-event recording area

Image/audio data recorded by the pre-event recording

(4) Copy area

Copied data

Note:

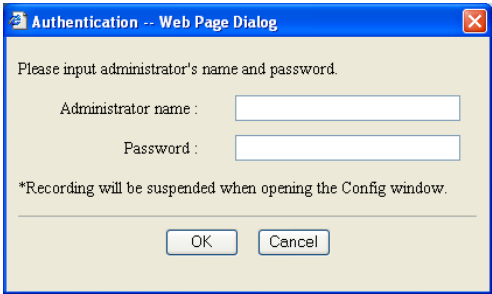
- When an unformatted hard disk drive is installed in the recorder, it will automatically be formatted as the normal recording area. However, when the hard disk drive that had been used not as the normal recording area is removed (Refer to the Installation guide.) and an unformatted hard disk drive is installed as a replacement, the newly installed hard disk drive will be formatted as the same recording area as the removed one.
 - Recording/playback is unavailable even if only the pre-event recording area or the copy area is created. Either the normal recording area or the event recording area shall be created.
 - When there is no normal recording area, images/audio recorded by manual recording and the schedule recording will be stored in the event recording area. When there is no event recording area, images/audio recorded by the event recording and the emergency recording will be stored in the normal recording area.
-

Disk partition information

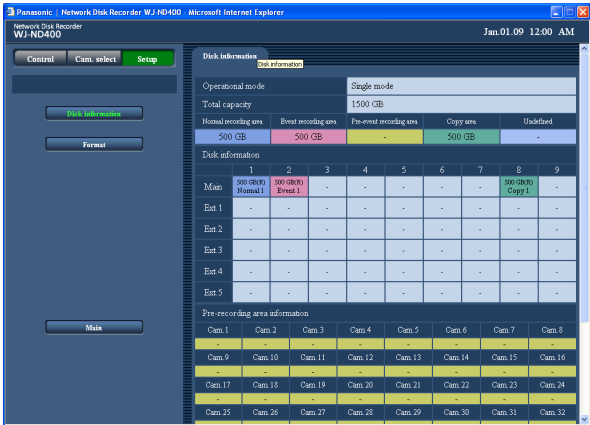
Important:

- When the HDD DISK MENU is displayed, all operations (including recording and playback) except the HDD DISK MENU operation will stop.
- When the HDD DISK MENU is displayed, all other users will forcibly be logged out. All other users accessing this recorder will also forcibly be logged out when performing the HDD unit installation/uninstallation.
- To close the disk configuration page, click the [Main] button. Do not click the [X] button at the top right of the window, otherwise it may cause malfunction.

1 Click the [Config.] button.
The authentication window will be displayed.



2 Enter the administrator name and the password, and then click the [OK] button.
The disk configuration page will be displayed.



3 Check each item.
Refer to the table "Disk information" for information about the items.

Disk information

Item	Description
Operational mode	The operational mode of the recorder will be displayed. Single mode/RAID5 mode/RAID6 mode
Total capacity	The total capacity of all the hard disk drives will be displayed.
Normal recording area	Capacity of the normal recording area (recording area for manual recording and schedule recording) will be displayed.
Event recording area	Capacity of the event recording area (recording area for emergency recording and post-event recording) will be displayed.
Pre-event recording area	Capacity of the pre-event recording area (recording area for pre-event recording) will be displayed.
Copy area	Available capacity of the copy area will be displayed.
Undefined	Capacity of area to which no recording area is assigned will be displayed.
Disk information	<p>Capacity and the formatted area of each hard disk drive on the recorder and the extension unit will be displayed.</p> <ul style="list-style-type: none"> • When operating in the RAID 5/RAID 6 mode, refer to "HDD1" for the capacity. • The following information will be displayed for the formatted area. Normal*: Hard disk drive that is formatted as the normal recording area. Event*: Hard disk drive that is formatted as the event recording area. Pre-event: Hard disk drive that is formatted as the pre-event recording area. Copy*: Hard disk drive that is formatted as the copy area. Remove: Hard disk drive is removed from the operation due to an error occurrence. Error: Hard disk drive in which an error occurred in the process of the format. N-Used: Hard disk drive that is formatted as the normal recording area using the other ND400. (Only playback is available. Recording is unavailable.) E-Used: Hard disk drive that is formatted as the event recording area using the other ND400. (Only playback is available. Recording is unavailable.) P-Used: Hard disk drive that is formatted as the pre-event recording area using the other ND400. (Only playback is available. Recording is unavailable.) C-Used: Hard disk drive that is formatted as the copy area using the other ND400. (Only playback is available. Copying is unavailable.) <p>* Indicates the recording order.</p> <p>The (R) mark of the hard disk drive capacity indicates the hard disk drive to be used for recording.</p>
Pre-recording area information	Capacity of pre-event recording area for each camera channel will be displayed.

Disk format

Format the hard disk drive according to your needs when adding or replacing the hard disk drive or when connecting an extension unit. It is possible to format the hard disk drives individually or all of them at the same time. (When operating in the RAID 5 or RAID 6 mode, format them at the same time.)

It is necessary to divide the hard disk drives into the normal recording area, event recording area, copy area and pre-event recording area.

When the hard disk drive is formatted, all the recorded data will be deleted.

Format

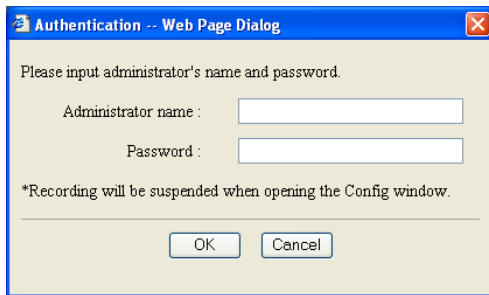
Assignment of event recording area and copy area, and formatting of the hard disk drives can be performed.

- Newly installed unformatted hard disk drives will automatically be formatted as the normal recording area when they are recognized.
- It will take around 30 seconds to format a single hard disk drive.

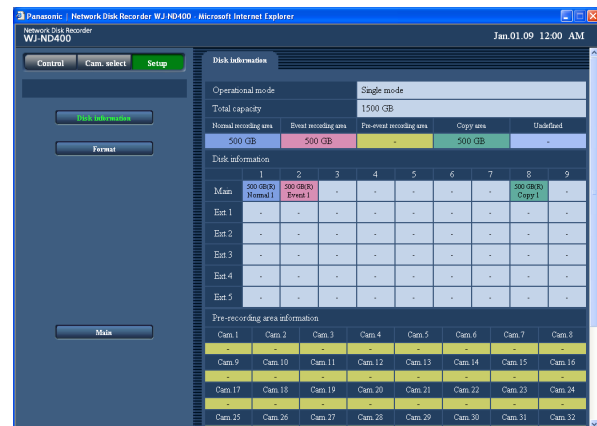
Important:

- When the HDD DISK MENU is displayed, all operations (including recording and playback) except the HDD DISK MENU operation will stop.
 - When the HDD DISK MENU is displayed, all other users will forcibly be logged out. All other users accessing this recorder will also forcibly be logged out when performing the HDD unit installation/uninstallation.
 - When exiting from the HDD DISK MENU, be sure to click the [Main] button. Do not click the [X] button at the top right of the window, otherwise it may cause malfunction.
-

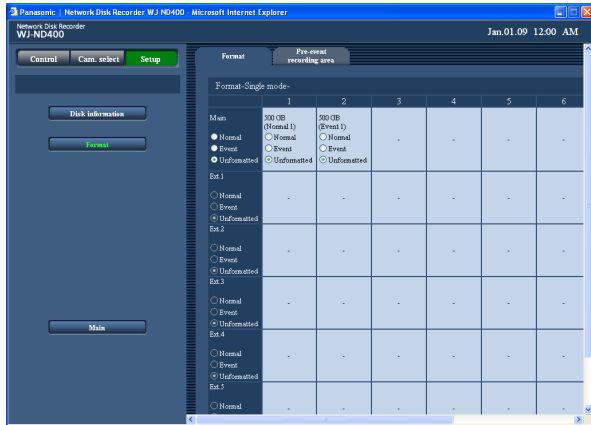
- 1 Click the [Config.] button.**
The authentication window will be displayed.



- 2 Enter the administrator name and the password, and then click the [OK] button.**
The disk configuration page will be displayed.



- 3 Click the [Format] button.**
The "Format" page will be displayed.



- 4 Select the hard disk drive to be formatted and select the recording area type by checking the checkbox.**

It is possible to select multiple hard disk drives.

Normal: Format as the normal recording area

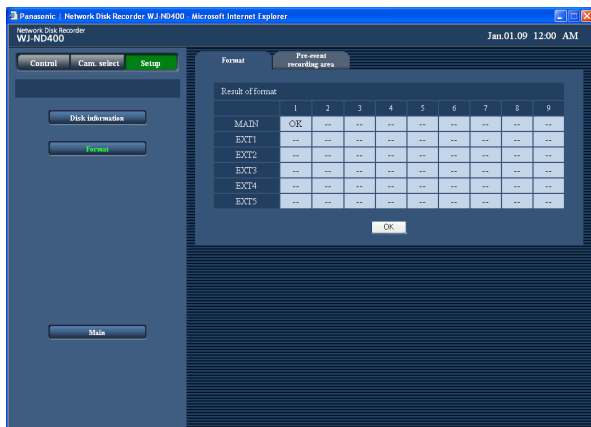
Event: Format as the event recording area

Copy: Format as the copy area

Unformatted: Do not format

- 5 Click the [Format] button.**

When formatting of the hard disk drive is complete, the result of format will be displayed.



- 6 Click the [OK] button.**
The "Format" page will be displayed again.

- 7 Click the [Main] button.**
The "Cam. select" window will be displayed again.

Note:

- Only one of the 4 recording areas can be assigned to a single hard disk drive.
- Only when operating in the single mode, the copy area can be assigned to only the hard disk drive inserted in HDD8 or HDD9 slot in the recorder. It is impossible to assign the copy area to any of the hard disk drive inserted in HDD1 - HDD7 in the recorder or to any of the hard disk drive in the extension unit.

It is impossible to assign the copy area when operating in the RAID 5/RAID 6 mode.

Format the pre-event recording area

It is possible to determine the capacity of the pre-event recording area for each camera channel.

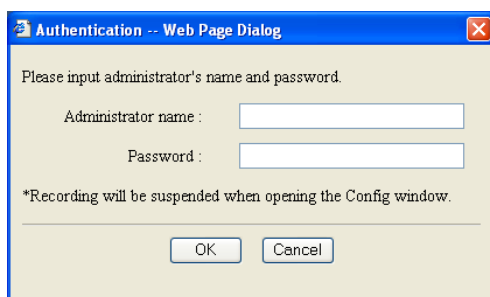
It may take around 10 minutes to complete the format as the pre-event recording area depending on the number of cameras.

Important:

- When the HDD DISK MENU is displayed, all operations (including recording and playback) except the HDD DISK MENU operation will stop.
- When the HDD DISK MENU is displayed, all other users accessing this recorder will forcibly be logged out. All other users accessing this recorder will also forcibly be logged out when performing the HDD unit installation/uninstallation.
- When exiting from the HDD DISK MENU, be sure to click the [Main] button. Do not click the [X] button at the top right of the window, otherwise it may cause malfunction.
- Before formatting as the pre-event recording area, configure the following settings for the camera channels for which the pre-event recording area is to be assigned.
 - Configure the settings for "Model/Compression", "Address", "User name" and "Password" on the NW camera setup page.
 - Configure the pre-event recording rate and the pre-event recording duration on the "Program" page. After configuring the settings, access the camera and check if images from the camera are displayed. When formatting as the pre-event recording area while accessing a camera for which the settings are not configured and images from the camera is not being displayed, images supposed to be recorded for the set recording duration may not be recorded.
- When operating in the RAID 5/RAID 6 mode without extension units, it is impossible to format the pre-event recording area.
To perform the pre-event recording in the RAID system, it is necessary to connect an extension unit.

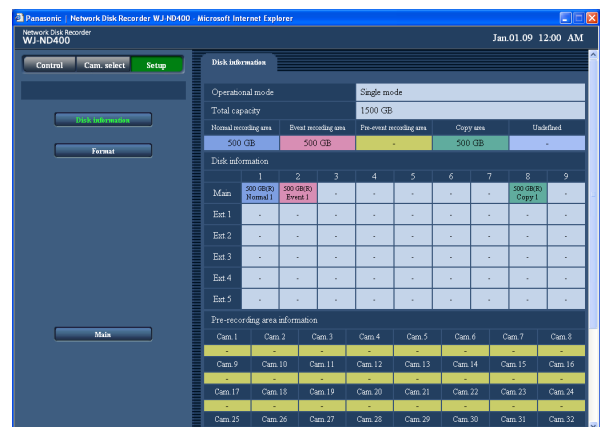
1 Click the [Config.] button.

The authentication window will be displayed.



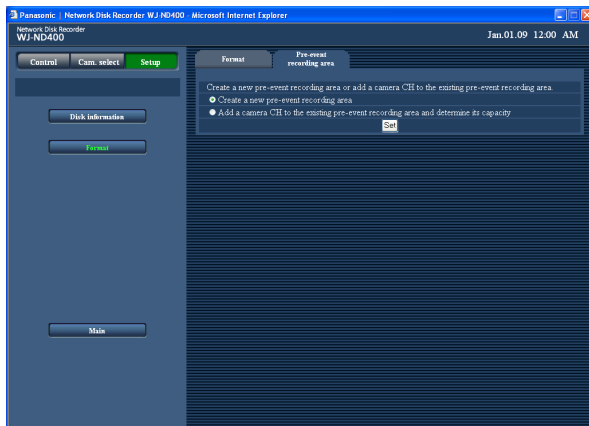
2 Enter the administrator name and the password, and then click the [OK] button.

The "Disk information" window will be displayed.

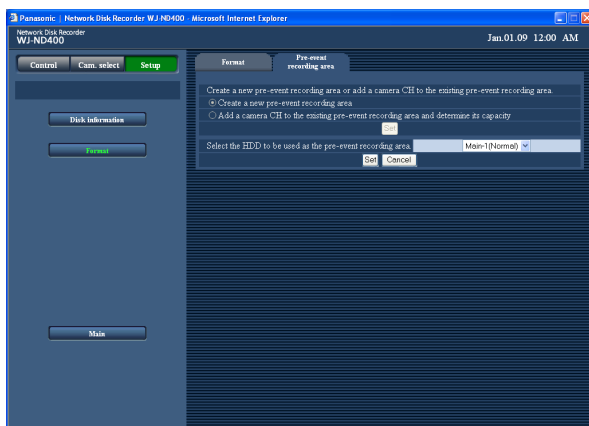


3 Click the [Format] button.
The "Format" page will be displayed.

4 Click the [Pre-event recording area] tab.
The "Pre-event recording area" page will be displayed.

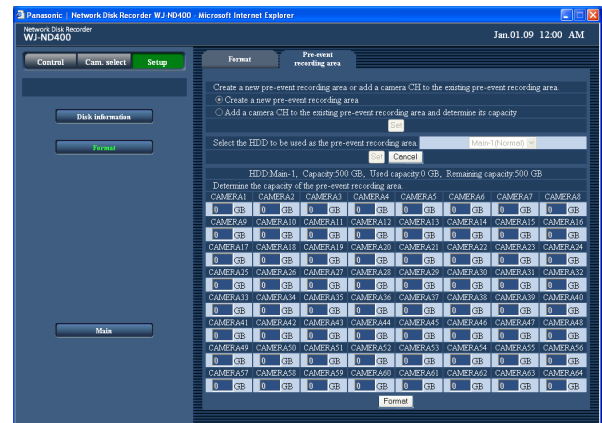


5 Select the method of how to set the pre-event recording area, and then click the [Set] button.
Create a new pre-event recording area
Add a camera CH to the existing pre-event recording area and determine its capacity
The setting page to select the hard disk drive on which the pre-event recording area is created will be displayed.



6 Select the hard disk drive on which the pre-event recording area is to be created and click the [Set] button.

The setting page to determine the capacity of the pre-event recording area will be displayed.



7 Select the camera channel and determine the capacity of the pre-event recording.

Pre-event recording areas for up to 64 camera channels can be created on a single hard disk drive. It is impossible to select the camera channel for which the pre-event recording area has already been created on the other hard disk drive. (It is also impossible to select the camera channel for which the pre-event recording area on the hard disk drive that is formatted as the pre-event recording area using the other ND400 even if the hard disk drive is recognized.)

Assign 5 GB or more to the pre-event recording area for each camera channel. When it is unnecessary to assign the capacity, enter "0".

8 Click the [Format] button.

Notification by e-mail

Alarm mail

The recorder address will be described on an alarm mail as follows.

Contents of the alarm mail

ND400 (192.168.0.250), alarm was occurred.

Alarm date: xx-xxx-xxxx xx:xx:xx GMT xx:xx (Example: 01-JAN-2009 GMT+0:00)

Cause of alarm: Displays an event type and a camera channel or an alarm number (Example: COMMAND ALARM 5CH)

File name of alarm image: The file name of the image attached to an e-mail.

URL:http://192.168.0.250/

Warning mail

The following mail will be sent to notify of a trouble occurrence to a registered address when the trouble occurs.

ND400 (192.168.0.250) STATUS REPORT.

DATE: 1-JAN-2009 12:00:00 GMT+0:00

STATUS: The description of the trouble will be displayed. (Ex. MAIN THERMAL ERROR)

Display	Description
DATE	Time and date when the trouble occurred will be displayed.
STATUS	The description of the trouble will be displayed. HDD capacity warning*1: Power outage detection: Recover from a power outage: NW camera error detection: NW camera error recovery: NW camera error detection (audio): NW camera error recovery (audio): HDD smart warning*2: HDD hour meter warning: Remove auto links (per HDD):
	<Anything other than FULL> NORMAL-HDD CAPACITY REMAINS **% EVENT-HDD CAPACITY REMAINS **% COPY-HDD CAPACITY REMAINS **% ** is remaining capacity (%). <FULL> EVENT-HDD FULL COPY-HDD FULL POWER LOSS POWER RECOVERED CAM** COMMUNICATION ERROR ** is camera channel. CAM** COMMUNICATION RECOVERED ** is camera channel. CAM** COMMUNICATION ERROR (AUDIO) ** is camera channel. CAM** COMMUNICATION RECOVERED (AUDIO) ** is camera channel. Recorder: MAIN-y SMART WARNING Extension unit: EXTx-y SMART WARNING x is unit number, y is disk number. Recorder: MAIN-y HOUR METER WARNING Extension unit: EXTx-y HOUR METER WARNING x is unit number, y is disk number. Recorder: MAIN-y LOGICALLY REMOVED Extension unit: EXTx-y LOGICALLY REMOVED x is unit number, y is disk number.

Display	Description
Remove auto links (per unit):	Recorder: MAIN LOGICALLY REMOVED Extension unit: EXTx LOGICALLY REMOVED x is unit number.
RAID5 recovery failure:	Recorder: MAIN RAID5 RECOVERY FAILURE Extension unit: EXTx RAID5 RECOVERY FAILURE x is unit number.
RAID6 recovery failure:	Recorder: MAIN RAID6 RECOVERY FAILURE Extension unit: EXTx RAID6 RECOVERY FAILURE x is unit number.
Fan trouble:	Recorder: MAIN FANy ERROR Extension unit: EXTx FANy ERROR x is unit number, y is FAN number.
Thermal trouble:	Recorder: MAIN THERMAL ERROR Extension unit: EXTx THERMAL ERROR x is unit number.
NW link error: RAID5 1 DOWN:	NETWORK LINK ERROR Recorder: MAIN RAID5 1 DOWN Extension unit: EXTx RAID5 1 DOWN x is unit number.
RAID5 2 DOWN:	Recorder: MAIN RAID5 2 DOWN Extension unit: EXTx RAID5 2 DOWN x is unit number.
RAID6 1 DOWN:	Recorder: MAIN RAID6 1 DOWN Extension unit: EXTx RAID6 1 DOWN x is unit number.
RAID6 2 DOWN:	Recorder: MAIN RAID6 2 DOWN Extension unit: EXTx RAID6 2 DOWN x is unit number.
RAID6 3 DOWN:	Recorder: MAIN RAID6 3 DOWN Extension unit: EXTx RAID6 3 DOWN x is unit number.
Camera SD memory card error	CAM ** SD ERR ** is camera channel.
Camera SD memory card starting write error:	CAM ** SD START ERR ** is camera channel.
Camera SD memory card ending write error:	CAM ** SD END ERR ** is camera channel.
Camera SD memory card list request error:	CAM ** GET LIST ERR ** is camera channel.
Camera SD memory card data obtainment failure:	CAM ** GET IMG ERR ** is camera channel.
Camera SD memory card data deletion failure:	CAM ** DEL IMG ERR ** is camera channel.
Video loss detection:	CAM ** VIDEO LOSS ** is camera channel.
Video loss recovery:	CAM ** VIDEO RECOVERED ** is camera channel.

Display	Description
Single mode format failure:	Recorder: MAIN-y SINGLE FORMAT ERROR Extension unit: EXTx-y SINGLE FORMAT ERROR x is unit number, y is disk number.
RAID5 mode format failure:	Recorder: MAIN RAID5 FORMAT ERROR Extension unit: EXTx RAID5 FORMAT ERROR x is unit number.
RAID6 mode format failure:	Recorder: MAIN RAID6 FORMAT ERROR Extension unit: EXTx RAID6 FORMAT ERROR x is unit number.
HDD remove error:	Recorder: MAIN-y SWAP WARNING Extension unit: EXTx-y SWAP WARNING x is unit number, y is disk number.
Alteration detected:	ALTERED **CH ** is camera channel.

***1 HDD capacity warning**

A warning mail with the <except FULL> content will be sent when the available disk capacity becomes less than the set value for "HDD capacity warning" on the [Disk] tab page under "Maintenance". After a warning mail is sent, a warning mail with the <except FULL> content will be sent each time 1% of the available disk capacity is reduced, and a warning mail with the <FULL> content will be sent when there is no available disk capacity.

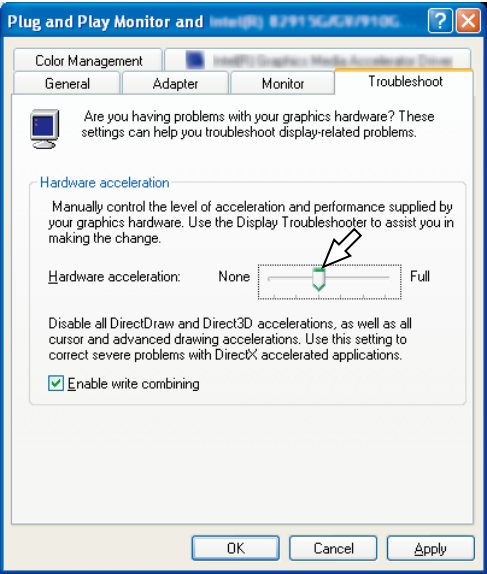
***2 The HDD smart warning mail is not sent in the RAID 5 or RAID 6 mode.**

Troubleshooting

Check the following before requesting repair. Contact your dealer if a problem cannot be solved even after checking and trying the solution or a problem is not described below, and when having a problem with the setting configurations and installations.

Problem	Check item/Remedy	Reference page
Cannot access from the browser	▶ Is the LAN cable firmly connected to the network port? Confirm that the cable is firmly connected.	–
	▶ Is the access indicator of the network port lit? When it is not lit, connection to a LAN is not established or a network is not working correctly. Confirm that the access indicator of the network port is lit. Refer to the system administrator if it is not lit.	–
	▶ Are you accessing the wrong IP address? Check the connection as follows: >ping "IP address of the recorder" If there is reply from the recorder, the connection is normal. If not, check the settings of the IP address and the subnet mask.	–
	▶ Is the same IP address provided to other devices? Refer to a system administrator for further information.	11
	▶ Are there contradictions between the address and the network subnet to be accessed?	11
	▶ When the recorder and the client (PC) are on the same subnet, is the same subnet set for the IP addresses of the recorder and the PC?	–
	▶ Is the "Use Proxy Server" checkbox of the browser setting checked? When accessing the recorder in the same subnet, entering the address of the recorder in the "Don't Use Proxy For These Addresses" box is recommended.	–
The buttons on the browser are displayed out of alignment.	▶ The buttons may not be displayed orderly if the font setting of Windows has been changed from the default setting. Use with the default font setting.	–
Some contents are not displayed on the browser.	▶ Press [F5] on the keyboard to request images.	–

Problem	Check item/Remedy	Reference page
The image is not being refreshed.	▶ Depending on the traffic of the network, there might be difficulties in displaying images. Press [F5] on the keyboard to request images.	–
	▶ Images recorded at low recording rate (less than 1 ips) may sometimes not be refreshed.	–
Live/recorded images in MPEG-4 format are not displayed in a normal manner.	▶ When turning on the power of the recorder or when connecting the LAN cable to the camera port when the camera is active, images may not be displayed/recorded in a normal manner for around a minute (at a maximum) just after turning on the power of the recorder or after connecting the LAN cable to the camera port.	–
No SD memory data is listed in the list display area.	▶ SD memory data cannot be searched by using other search filters together with "SD". Search SD memory data using the search filter "SD" only, and select and play the listed SD memory data.	–
	▶ Recording time and date of SD memory data is recorded based on the clock of the camera. Check the clock of the camera.	–
Cannot play SD memory data	▶ When recorded frames are not many enough to play smoothly, playback of SD memory data may fail. In this case, display images by performing frame by frame playback/reverse frame by frame playback.	–

Problem	Check item/Remedy	Reference page
When displaying MPEG-4 images on a multi-screen, images from two cameras or more are displayed in sequence on a screen of multi-screen.	<p>This may occur due to the display adapter and driver combination. When this occurred, update the driver of the display adapter to the latest version first.</p> <p>If updating the driver does not solve the problem, adjust the hardware acceleration as follows. The following are descriptions when using Windows XP.</p> <ol style="list-style-type: none"> 1. After closing all browser windows, right-click on the desktop and select "Properties" from the displayed pop-up menu. 2. Select "Settings" from "Display Properties", and then click the [Advanced] button. 3. Click the [Troubleshoot] tab and disable the DirectDraw acceleration by adjusting the level of "Hardware acceleration". 	—
Cannot close the authentication window displayed when trying to open the basic operation window.	Confirm the correct user name and password.	72
Cannot play the downloaded image file.	When any setting of the setup menu has been changed during the download, the download will be canceled automatically. In this case, the downloaded file is not a complete file and it is impossible to play it. Download again.	—
The message "Please Wait." Remains on the screen.	The "ActiveX control" is not installed in the PC. Install the "Active X control" by referring to the following page.	101

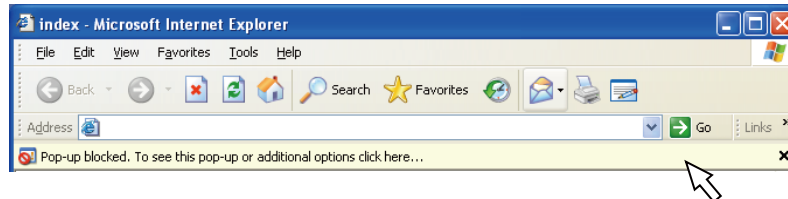
Problem	Check item/Remedy	Reference page
Audio cannot be recorded. Audio cannot be played correctly.	▶ Is the audio output setting of the camera set correctly?	34, 43
	▶ Is the audio bit rate of the camera set to "32kbps"? Check the audio bit rate setting of the camera.	34, 43
	▶ When starting the playback of the latest images during recording, audio may sometimes not be heard. In this case, stop the playback and then start it again.	–
Audio cannot be played using the viewer software.	▶ Are the image data file "filename.n3r" and the audio data file "filename.n3a" saved in the same folder? Check the folder.	Operating Instructions (PDF)
No live image is displayed.	▶ Are the connected network cameras configured correctly? Check the settings of the setup menu ("Camera" - "NW camera").	49
	▶ Are the settings of the setup menu configured correctly? Check the settings of the setup menu ("Schedule" - "Program" - "Live video").	43
	▶ Are the network settings of the cameras and the unit configured correctly? Check the settings of IP address, subnet mask and default gateway for them.	63
	▶ When M-JPEG is selected for the image compression method of the camera, live images may not be displayed in the image display area and black screen will be displayed for a few minutes in the following cases. <ul style="list-style-type: none"> • When frequently checked if the appropriate values are set for the recording settings by clicking the [Measurement] button • When the settings of the recorder are saved repeatedly Wait around 10 minutes without any operations. The recorder will function normally.	–
	▶ When trying to display MPEG-4 images via the Internet, images may not be displayed. MPEG-4 image display via the Internet is affected by the configurations of the network devices such as a router. Refer to the network administrator for further information.	–

Problem	Check item/Remedy	Reference page
Playback of recorded images stops, and resumes after a while.	▶ Playback of recorded images may stop when auto-correction of the recorder clock causes a gap in playback time. In this case, wait for a while until playback resumes.	–
Live/recording images are not displayed.	▶ When logging in to a network that requires the active directory authentication, installation of ActiveX may fail. 1. Register the URL of the recorder as a trusted site. 2. Launch Microsoft Internet Explorer and click "Tools" on the menu bar. 3. Select "Internet options". 4. Click the "Security" tab on the displayed window, and select "Trusted sites". 5. Select "Low" for "This zone's security level". (This may lower the security level of the PC being used). 6. Click "Site". Register the URL of the recorder by clicking "Add". Make sure that the "Must check all servers (https:) of sites in this zone" checkbox is not checked.	–
Refresh of live images is unstable. The web browser is disconnected. Network performance is poor. Image file downloaded from the FTP server is faulty. Images cannot be displayed/recorded/played correctly.	▶ When the image compression method of all cameras in use is not the same, performance may become lower. (Refresh of images will be unstable.)	–
	▶ It may be possible that the settings are configured to require performance beyond the capabilities of the network line and the network function of the recorder. Lower the value/rate of the settings relating to the network such as the transmission rate, recording rate, etc.	43
	▶ The line speed settings may be not the same between the recorder and the hub, for example, 100BASE-TX Full for the recorder and 100BASE-TX half, etc. The line speed may sometimes not be conformed depending on the hub. Check the line speed settings of both the recorder and the hub, and configure the line speed setting of both to conform them.	–
Cannot operate the camera.	▶ Check the model of the set camera on the setup menu ("Camera" - "NW camera").	49
	▶ Check if the user name and password are set correctly on the setup menu NW camera".	49

Message displayed on the information bar

Depending on the operation system in use, the following may occur. Follow the instructions below when the following occurred. By performing the following solutions, other applications may not be affected.

The "Information Bar" expressed in the following symptom and solutions will be displayed just below the address bar only when there is information to communicate.



Symptom

The following message is displayed on the information bar.
"Pop-up blocked. To see this pop-up or additional options, click here..."

The following message is displayed on the information bar.
"This site might require the following Active X control: 'Wvasetup.exe' from 'Panasonic Corporation'. Click here to install..."

The following message is displayed on the information bar.
"To help protect your security, Internet Explorer blocked this site from downloading files to your computer. Click here for options..."

Solutions

Click the information bar and select "Always Allow Pop-ups from This Site".
The dialog window saying "Allow pop-ups from this site?" will be displayed. Click the [Yes] button.

Click the information bar and select "Install ActiveX Control...".
The "Security Warning" window will be displayed. Click the "Install" button on the displayed "Security Warning" window.

Click the information bar and select "Download File...".
When downloading fails even though you selected "Download File...", perform the following operation. Then, click the [Custom Level...] button. The "Security Settings" window will be displayed. Under "Downloads", select "Enable" for "Automatic prompting for file downloads". Click the [OK] button. The "Warning" window will be displayed. Click the [Yes] button.

Symptom	Solutions
<p>The following message is displayed on the information bar when tried to execute a downloaded file. "The publisher could not be verified. Are you sure you want to run this software?"</p>	<p>Click the [Run] button.</p>
<p>Unnecessary status bar or scroll bar is displayed on the pop-up window.</p>	<p>Click "Internet Options" on the Tools menu of Internet Explorer, and then click the [Security] tab. Then, click the [Custom Level...] button to open the "Security Setting" window. Under "Miscellaneous", select "Enable" for "Allow script-initiated windows without size or position constraints". Click the [OK] button. The "Warning" window will be displayed. Click the [Yes] button.</p>

Glossary

This manual uses the following words.

ActiveX Control

A software module developed by Microsoft. It is used to add functions, downloaded from a web server via the Internet or an Intranet, to Internet Explorer. The recorder uses it to display video.

Bit rate

Indicates how many bits of data can be processed or transmitted in a unit of time. Generally, the units are in bps, or bits per second. Used to indicate the compression rate of video and audio data, and how much data a communications line can send and receive in 1 second.

Broadband Router

Router used to access the Internet via high-speed ADSL or fiber optic lines.

Cable Modem

Device used for connecting to the Internet via a CATV line. Called a cable modem because it functions similar to a modem on a phone line. It differs from regular modems that use a serial port in that it is connected to a PC via an Ethernet connection.

Camera operation

Operations of the camera connected to the recorder such as pan and tilt (horizontal and vertical position), zooming, focusing, brightness, preset motions (movement towards a set horizontal and vertical position) and auto functions (automatic camera rotation, etc.).

DDNS

A technology for dynamically translating DNS server information to enable the transfer of only differences in information between DNS servers (refer to "DNS"). This reduces the data transfer amount necessary for updating information on the DNS server and reduces the load on the network.

DHCP

A protocol that enables PCs to automatically get information from a server needed for accessing a network.

DHCP Server

Maintains network-related information (assigns IP address ranges to (default) gateway servers and clients), and distributes that information when clients request it.

DNS

The long lists of numbers or IP addresses that are used in network environments are difficult to remember, which makes them impractical. This is why PCs are given an easy-to-follow name (domain name) which is converted to an IP address before they are communicated with. The DNS provides translation between domain names and IP addresses.

Default Gateway

Network device used as a gateway for networks, such as a local network, to access PCs on an external network. Data is sent using the default gateway if a gateway is not specified in the destination IP address.

Disk Configuration

Configure the HDD after replacing, removing, or adding a HDD. Disk Configuration is the menu for configuring the HDD.

Electronic Zoom

Enlarges live images and playback images during playback. The electronic zoom enlarges the images by the recorder and is separate from the zoom function included as part of the camera operations for enlarged images.

Emergency Recording

Gives priority to recording video and audio when an emergency occurs using the external switch connected to the recorder.

Ethernet

LAN communication developed by Xerox.

Event

Indicates an occurrence that causes the recorder to take an event action. Events include, terminal alarms, command alarms, and site alarms.

Event recording

Function that automatically starts video and audio recording when an event occurs. Event recording includes Pre-event recording that records images before the event and Post-event recording that records images after the event.

External Recording Mode

Use the external switch connected to the recorder to switch to time tables such as the recording settings and event action settings.

FTP

A protocol that is commonly used for transferring files over the Internet.

Firewall

A type of security used when accessing outside networks like the Internet. A PC is used to prevent computers outside a local network from accessing the network.

Full Duplex

Communications method that allows simultaneous sending and receiving by transmitting in both directions using an independent sending line and receiving line.

Global Address

IP address assigned to each device connected to the Internet that is equivalent to an address on the Internet. IP address is required for Internet communications.

HDD

Abbreviation for hard disk drive, a type of mass storage device.

Camera images are recorded onto a hard disk drive.

HTML

HTML is a markup language used for describing the logical structure of a document and its appearance. Links to images, audio, video and other documents can be inserted into the document. A web browser is used to view documents written in HTML.

Half Duplex

Communications method that switches between sending and receiving using a single communications line.

IP Masquerading

A technology for sharing a single global address between two or more PCs. Allows simultaneous connection of multiple machines to 1 global address to dynamically convert NAT and different TCP/UDP port numbers.

IP address

The identification number assigned to PCs connected via IP networks such as the Internet or an Intranet, or to individual communications devices. Do not assign the same address to multiple devices, especially on the Internet.

Internet

PC network that connects networks all over the world. Different types of PCs can communicate over the Internet.

LAN

A communications network for connecting PCs, printers and other network devices in a relatively small area such as in a building or floor of a building or campus in which data is transferred.

M-JPEG

Video format in which the camera sends continuous JPEG images.

Compared with sending images from the camera one at a time, this method reduces the load on the network. However, the transfer rate may change depending on the status of the camera. Images may be represented as a JPEG depending on the camera.

MAC address

Fixed physical address assigned to network devices. Devices send and receive data based on this.

Manual recording

Click the [Recording] button and the [Recording stop] button to manually start and stop recording of video and audio.

Multicast

A way to send the same data to multiple users specified on a network.

Multiscreen Display

This recorder can display multiple camera channels simultaneously while displaying live images or playback images.

NAT (Network Address Translation)

A technology for sharing a single global address between two or more PCs.

NTP (Network Time Protocol)

A protocol developed to accurately maintain time among hosts on the Internet.

POP 3

A protocol for receiving e-mail stored on a server on the Internet or an Intranet.

POP 3 Server

A server that supports POP3, currently the most widely used mail sending protocol.

Plug-in Software

Small programs used to add functions to application software.

PoE (Power over Ethernet)

A technique for supplying power and data simultaneously over an Ethernet cable. PoE was standardized in June, 2003 as "IEEE802.3af".

PoE Supplied Hub

A switching hub that provides PoE functionality. A maximum of 48 V 15.4 W of power can be supplied to cameras and other devices.

Port Number

A sub address set below the IP address to connect multiple parties simultaneously for communication (TCP, UDP, etc.) on the Internet.

Primary Server

DNS servers usually have more than 2 system and the primary server is the main system.

Private Address

IP address assigned when connecting primarily to LAN. Private IP addresses can be assigned freely on a network and do not require a formal application. However, because private IP addresses cannot be used to access the Internet, a router or other device is necessary to assign a global IP address.

Protocol

A set of rules that allows the exchange of data amongst different types PCs with information. The Internet uses the TCP/IP protocol as its base and information is transferred following http and ftp protocols depending on the application.

Proxy Server

PC or software that connects with the Internet as the proxy for a computer on a local network. It allows special connections from the internal network and blocks unauthorized access from external networks.

RAID (RAID5)

An abbreviation for Redundant Arrays of Inexpensive Disks 5 that provides a highly reliable disk array by distributing access over multiple HDDs, increasing both speed and capacity. Even if one HDD has errors, data can be recovered based on error correction data recorded on other HDDs. (RAID5 is used when 3 or more HDDs are connected. However, when 2 or more HDDs simultaneously have errors, data cannot be recovered.)

RAID (RAID6)

An abbreviation for Redundant Arrays of Inexpensive Disks 6 that provides a highly reliable disk array by distributing access over multiple HDDs, increasing both speed and capacity. Even if two HDD has errors, data can be recovered based on error correction data recorded on other HDDs. (RAID6 is used when 4 or more HDDs are connected. However, when 3 or more HDDs simultaneously have errors, data cannot be recovered.)

Recording rate (ips, I-Frame)

Unit that determines the smoothness when recorded images are played back. "ips" indicates the number of recorded frames in 1 second. When the recording rate is higher, the playback is smoother, but available recording time is reduced. I-Frame indicates the refresh rate set on the camera.

Resolution

Indicates the smoothness of the image quality and the size of the images recorded from the camera. Indicates the number of dots used in the image displayed on the screen. A horizontal resolution of 720 dots and a vertical resolution of 480 dots is expressed as 720-480.

Router

Placed in between different networks, a router sends data to the proper destination via network. If data on the network is addressed to an external network, routers send the data to the outside of the network after judging the optimum sending route.

SD memory recording, SD memory data

SD memory recording is a camera function that saves images in the camera's internal SD memory when communication with the camera is disconnected within the time table recording time set on the recorder. SD memory data refers to those images recorded on the card.

SMTP

A protocol for sending e-mail on the Internet or an Intranet. Used when transferring mail between servers or when clients send mail to the server.

SMTP authentication

SMTP mail transfer protocol appended with a user authentication function. It authenticates passwords and user accounts between SMTP servers and clients. Both SMTP servers and clients must support SMTP authentication.

SMTP Server

A server that supports SMTP, currently the most widely used mail transfer protocol.

SNMP

A protocol for monitoring and managing networked communications devices, such as routers, PCs, cameras and Network Disk Recorders via a network.

Schedule Recording

Function that automatically starts video and audio recording on a preset time schedule.

Secondary Server

DNS servers usually have more than 2 systems and the secondary server is the sub system. If there is trouble with the primary server, the secondary server takes over.

Sequence

Function that automatically switches the camera image in a preset order. Sequence is available on the recorder when live images are displayed.

Subnet

A small network used as a unit of administration when a larger network is divided into smaller networks. Large networks in corporations, for example, the network can be broken down into smaller networks called "subnets" to make the network more manageable and lines used more efficiently. In this case, these smaller networks are called subnets.

Subnet mask

Subnet mask consists of 32-bit numeric values. According to the values, devices can determine which part of the address is the network address and which part is the host address.

System Administrator

Person with the responsibility for setting up and monitoring the recorder.

TCP/IP

The standard network protocol for the Internet and Intranets.

URL

An address for locating information resources such as documents and images on the Internet.

Unicast

Way to send data to a single IP address on a network.

VPN

Service used to make public lines as private lines. Many companies are using this as a new medium of communication instead of costly private lines. Depending on service, VPN also provides a secure line using authentication technology and encryption.

Video Motion Detection (VMD)

Function that automatically detects objects moving in video images.

The main unit records the VMD information sent from the camera and has a VMD search function (*) to find images for only the time and date at which motion was detected.

* Refer to the readme.txt for information about cameras that support VMD search.

WAN

Allows physically separated PCs, such as between the head office and a branch office, to connect via a phone line or private line data for exchanging.

Web Browser

Application software necessary for viewing web pages. The software downloads HTML, image, and sound files from the Internet and displays them after analyzing them. Microsoft Internet Explorer is one of the web browsers.

Index

A	
Abbreviations.....	4
About the operation window	15
About the user manuals	3
Access interval	67
Access log status	77
Access priority.....	71, 72, 74
Activation time.....	33
Address	52, 66, 82
Address1 - Address4.....	61, 69
Administrator	71
Administrator name	71
Alarm mail.....	48, 93
Alarm message.....	48
Alarm output.....	39
Alarm reset	77
Alarm suspend	77
Alteration detection	59
Attach alarm image	60
Audio rec.	35, 45
Authentication	60
Auto adjustment time	33
B	
Bandwidth control	64
Basic.....	31, 39, 63, 70
Basic operation	25
Basic settings.....	31
Buzzer	31
Buzzer duration	39
C	
Camera.....	49, 76
Camera auto-registration	29
Camera control.....	76
Camera partitioning.....	71, 72, 74
Camera port	78
Camera registration.....	28
Camera setup.....	35, 45
Camera title	52
Capacity	81
Channel to send	59
Client PC port.....	78
Command alarm.....	42
Community	68
Compression	34, 44
Contact.....	68
Copy	77
Copy area	80, 83, 88
Current temperature	78
D	
Date display format	32
DDNS.....	67
Default gateway	65
Default screen	71, 72, 74
Delete the host settings.....	75
Delete the user settings.....	73
Destination address.....	61, 69
DHCP	50, 65
Disk.....	83
Disk config.....	86
Disk end mode	83
Disk format	89
Disk information	79, 80, 88
Disk partition information	87
Display/Close the operation window.....	15
DNS	65
Domain name	65
Duration-Post	59
Duration-Pre	59
E	
Edit the host settings.....	75
Edit the user settings.....	73
Emergency recording	34
End	47
Error log status	77
Error output duration	32
Error reset.....	77
Event	38, 47
Event log status.....	77
Event rec. - Post-event.....	45
Event rec. - Pre-event	44
Event recording area	80, 83, 88
Exceptions.....	62
Ext1 - 5	78
F	
File name	58
Format	89
Format the pre-event recording area.....	91
FTP	58
FTP image transmission by alarm	48
FTP port number	64
FTP server address	58
FTP transmission by periodic timer.....	48
G	
Gateway	66
Glossary	103

Go to last before.....	31
Group	52, 54
Group title.....	54

H

Hardware version	78
HDD auto delete.....	84
HDD capacity warning.....	83
HDD management.....	86
Highest temperature.....	78
Host.....	74
Host authentication	70
Host IP address.....	74
Host name	67
Hour meter	81
Hour meter warning.....	83
HTTP port number.....	64

I

Image transmission by alarm	59
Image transmission by periodic timer	58
Internal temperature	78
Interval.....	59
IP address	50, 65

L

Language.....	26, 31
Language/Time & date	26
LCD setup lock.....	31
Level	71, 72, 74
Line speed	65, 82
Live video	44
Location.....	68
Login user.....	82

M

MAC address.....	50, 78
Mail	60
Maintenance.....	76, 78
Maintenance port	78
Major operating controls and their functions	17
Manual delete for copy area.....	84
Manual delete for event recording area.....	84
Manual delete for normal recording area	84
Manual rec.....	44
Manual rec. operation	77
Manufacturer	52
Max. bit rate (ips).....	34, 44
Max. network speed (Mbps).....	34, 44
Message displayed on the information bar.....	101
Mode	58

Model	34, 44, 50
Model/Compression.....	52

N

Network	63, 76
Network information.....	82
Network log status	77
Network settings	11, 27
Network settings of a PC	13
Network settings of the recorder.....	11
Network setup - Camera port/Client PC port.....	27, 65
Network setup - Maintenance port	27, 65
New IP address	50
Normal recording area.....	80, 83, 88
Notification by e-mail	93
NTP.....	57
NTP server address.....	57
Number of FTP users	82
NW camera	49
NW link down detection	64

O

Operation flow.....	7
Operational mode.....	80, 88
Output terminal.....	40, 42

P

Panasonic alarm protocol	48, 69
Password.....	31, 52, 58, 61, 67, 72
Playback operation.....	77
Playback point operation area.....	22
POP server address	60
Port forwarding.....	64, 65
Port number	52, 62, 65
Port number(from camera to ND400).....	41
Port number(to PC)	69
Port setup.....	29
Pre-event recording area.....	80, 88
Preface	3
Pre-recording area information.....	80, 88
Preset position	40, 42
Primary server address	65
Product information.....	78
Program.....	43, 47
Program setup.....	30
Proxy	62
Proxy setup use.....	62

Q

Quick	76
Quick settings.....	26

R		
Rec. cam.	40, 42	
Recorded time range.....	81	
Recorder setup.....	34, 44	
Recording	31	
Recording duration.....	34	
Recording information.....	80, 81	
Recording rate.....	34	
Remain capacity.....	81	
Reset to the default.....	85	
Restrictions when operating MPEG-4 images	5	
Retry	69	
Retype new password.....	71	
S		
Safe shutdown time	32	
Schedule rec.	44	
Schedule recording	43	
SD memory rec.....	35, 36, 45	
Secondary server address.....	65	
Sender's address	61	
Sequence	55	
Sequence display type	56	
Serial number	78	
Server	57, 76	
Server address	62	
Server directory	58, 59	
Settings management	85	
Setup.....	26, 76	
Setup menu and its items	8	
Site alarm	41	
Site alarm setup	41	
SMTP port number.....	60	
SMTP server address.....	60	
SNMP	68	
Software version 1.....	78	
Software version 2.....	78	
Software versions of extension units	78	
Special days	48	
Start.....	47	
Static route	65, 66	
Static route setting	66	
Status display area.....	21	
Subnet mask	65, 66	
Summer time(daylight saving)	33	
Summer time(daylight saving) table	33	
System name.....	68	
System requirements for a PC	3	
T		
Terminal alarm	40	
Time & date	26, 32	
Time adjustment.....	57	
Time display format.....	32	
Time table.....	47	
Time zone	32, 53	
Top page.....	17	
Total capacity	80, 88	
Trademarks and registered trademarks.....	4	
Troubleshooting.....	98	
Type	60	
U		
Undefined	80, 88	
User	72, 82	
User authentication	70	
User level.....	76	
User management.....	70	
User mng.....	76	
User name	52, 58, 60, 67, 72	
User setup load	85	
User setup save.....	85	
V		
Version information.....	78	
W		
Warning mail.....	93	
1-screen live sequence	56	
4-screen live sequence	56	
[Cam. select] button	19	
[Cam.]	56	
[CAM] tab	24	
[Control] button	18	
[Default gateway].....	27	
[DHCP].....	27	
[Dwell time].....	56	
[HDD] tab.....	22	
[IP address].....	27	
[Line speed]	27	
[Measurement].....	34, 44	
[Measurement] button	35, 46	
[Output terminal].....	41	
[Preset position].....	41, 56	
[Rec. cam.]	41	
[Setup] button.....	20	
[Subnet mask]	27	

For U.S. and Canada:

**Panasonic System Communications Company of North America,
Unit of Panasonic Corporation of North America**

www.panasonic.com/business/

For customer support, call 1.800.528.6747

Three Panasonic Way, Secaucus, New Jersey 07094 U.S.A.

Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada
(905)624-5010

www.panasonic.ca

For Europe and other countries:

Panasonic Corporation

<http://panasonic.net>

Importer's name and address to follow EU rules:

Panasonic Testing Centre

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg F.R.Germany